

FIG. 1

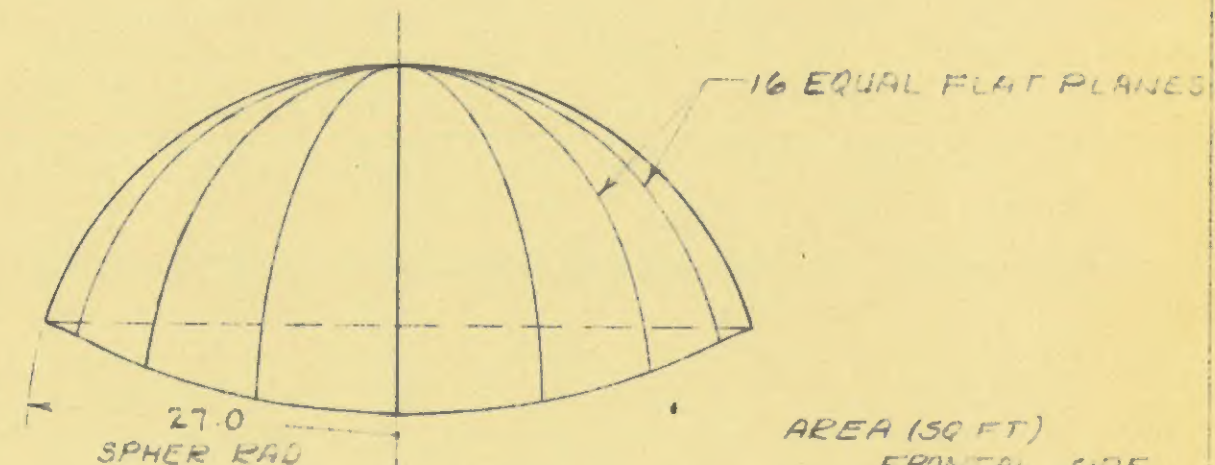
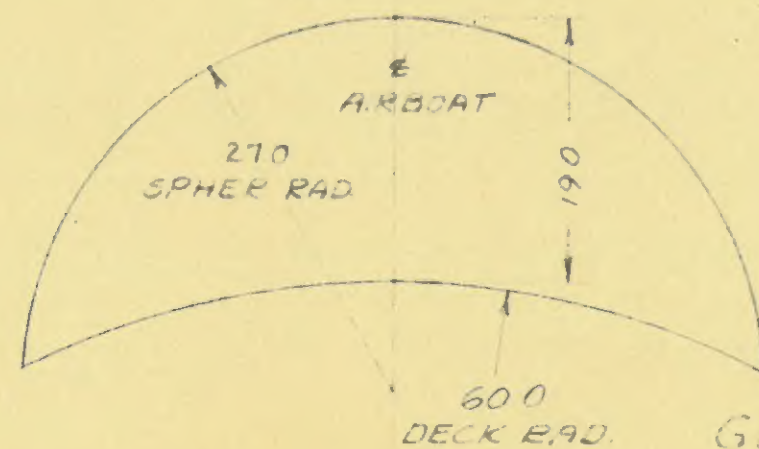


FIG. 2

AREA (SQ FT)  
FRONTAL SIDE  
FIG. 1 — 578 - 690  
FIG. 2 — 578 - 503  
SIDE AREA TAKEN  
ABOVE DECK LINE



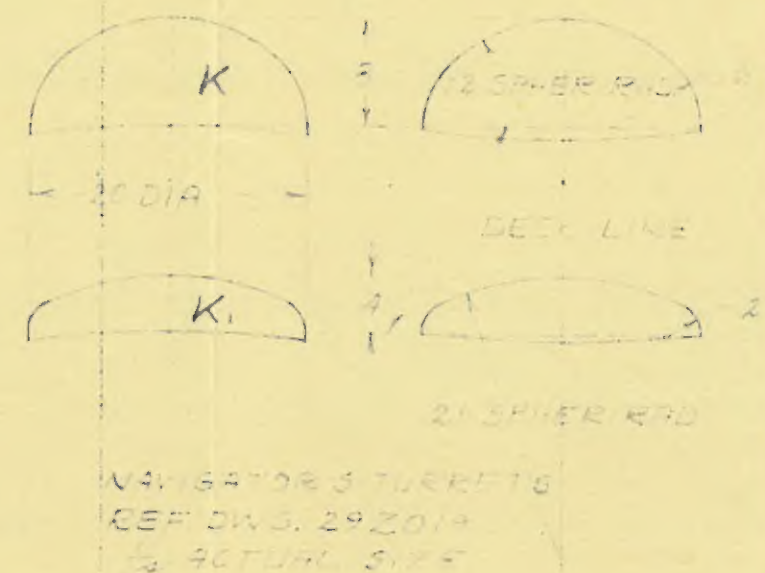
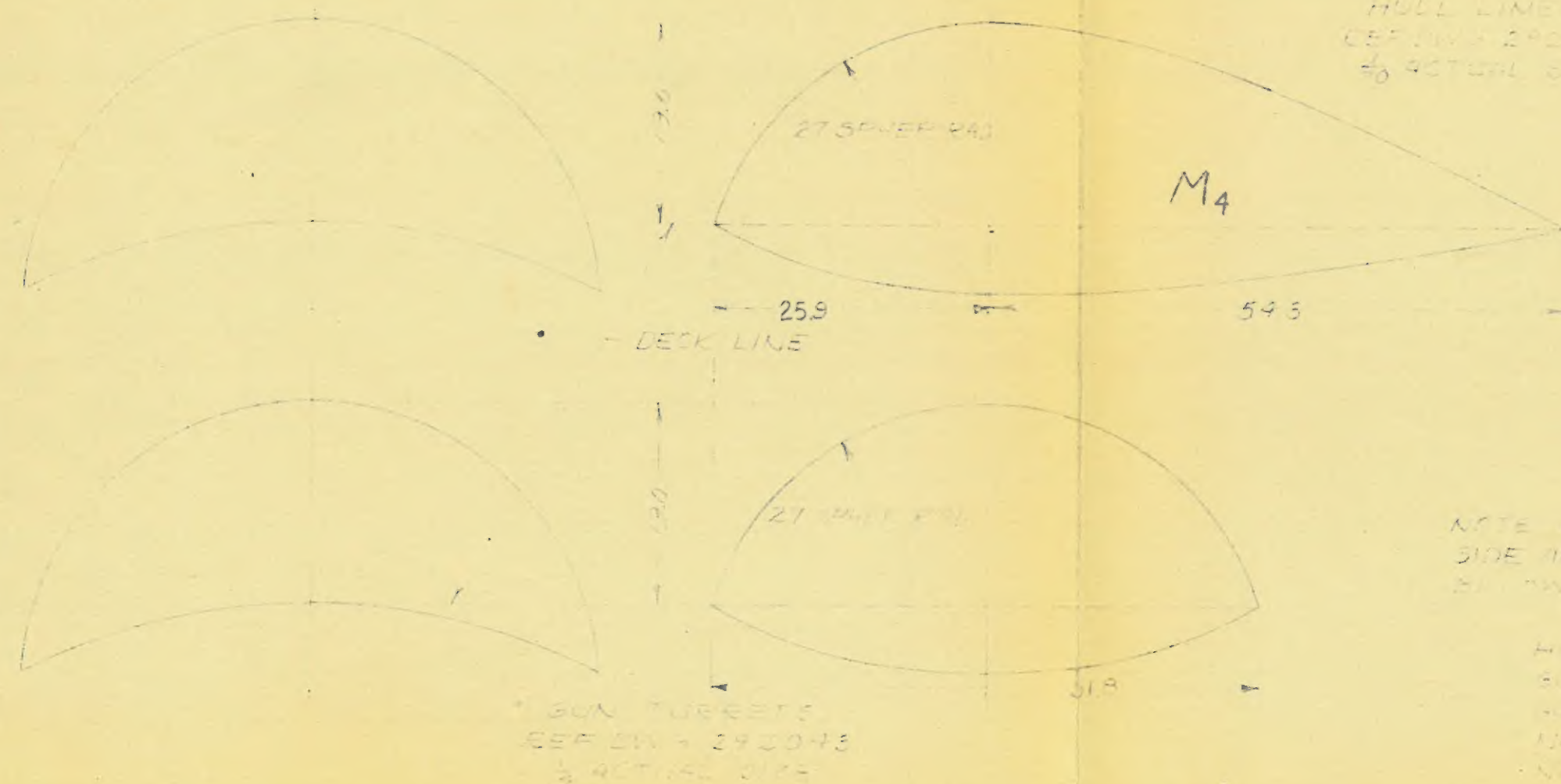
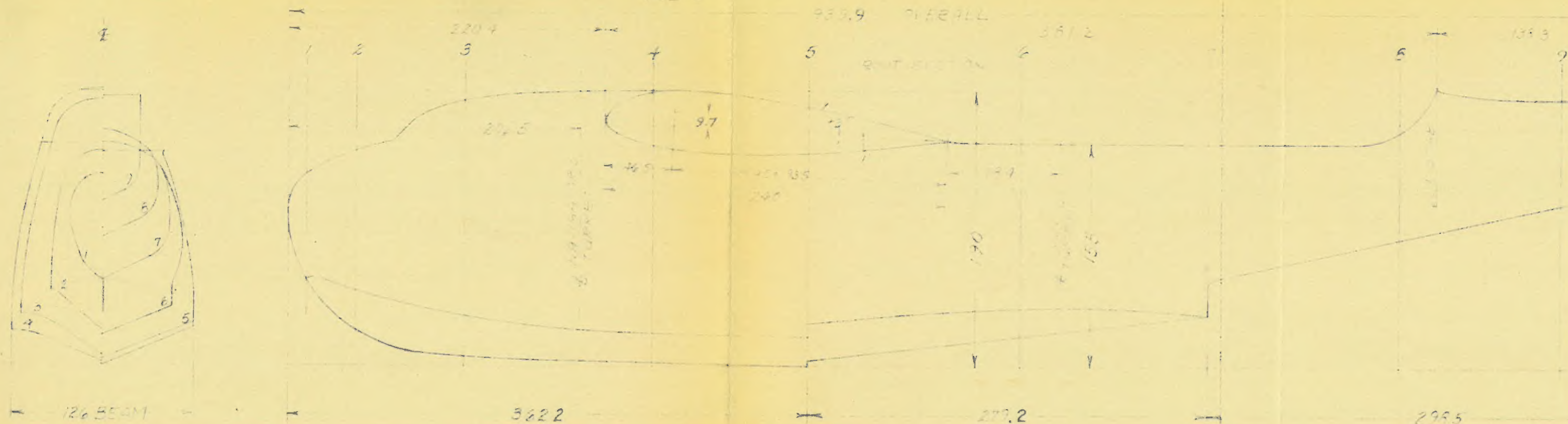
M<sub>3</sub>

XPB2Y-1  
GUN TURRET M<sub>3</sub>  
PROPOSED  
PRODUCTION MODEL

SEC. AA

REF DWG. 292043  
SCALE 1"=14" LEM 10-3-38



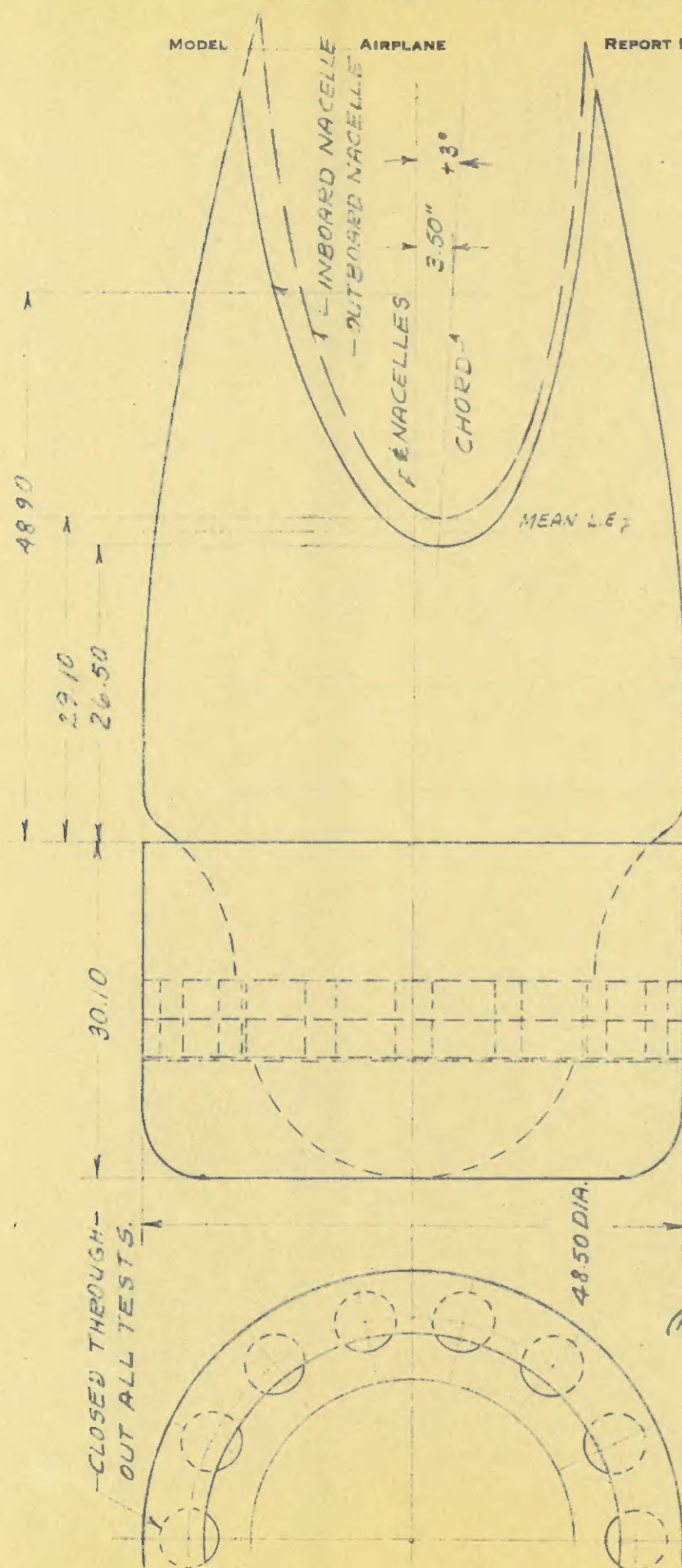


NOTE: HULL SIDE AREA INCLUDES WING ROOT SECTION  
SIDE AREA OF TURRETS DOES NOT INCLUDE TURRET  
BASE ON DECK LINE

	FRONTAL AREA SQ FT	SIDE AREA SQ FT
HULL	130	610
GUN TURRET WITH FARNING	5.78	2.90
GUN TURRET 1A (W/ FARNING)	5.78	2.93
NAV TURRET 3 (W/ FARNING)	4.07	1.89
NAV TURRET 4 (W/ FARNING)	4.53	1.62

HULL B<sub>2</sub> AND TURRETS K AND M<sub>4</sub>





FRONTAL AREA = 12.8 SQ. FT.  
SIDE AREA (FWD OF MEAN  
LEADING EDGE) = 19.2 SQ. FT.  
REF. DW'G. 292033

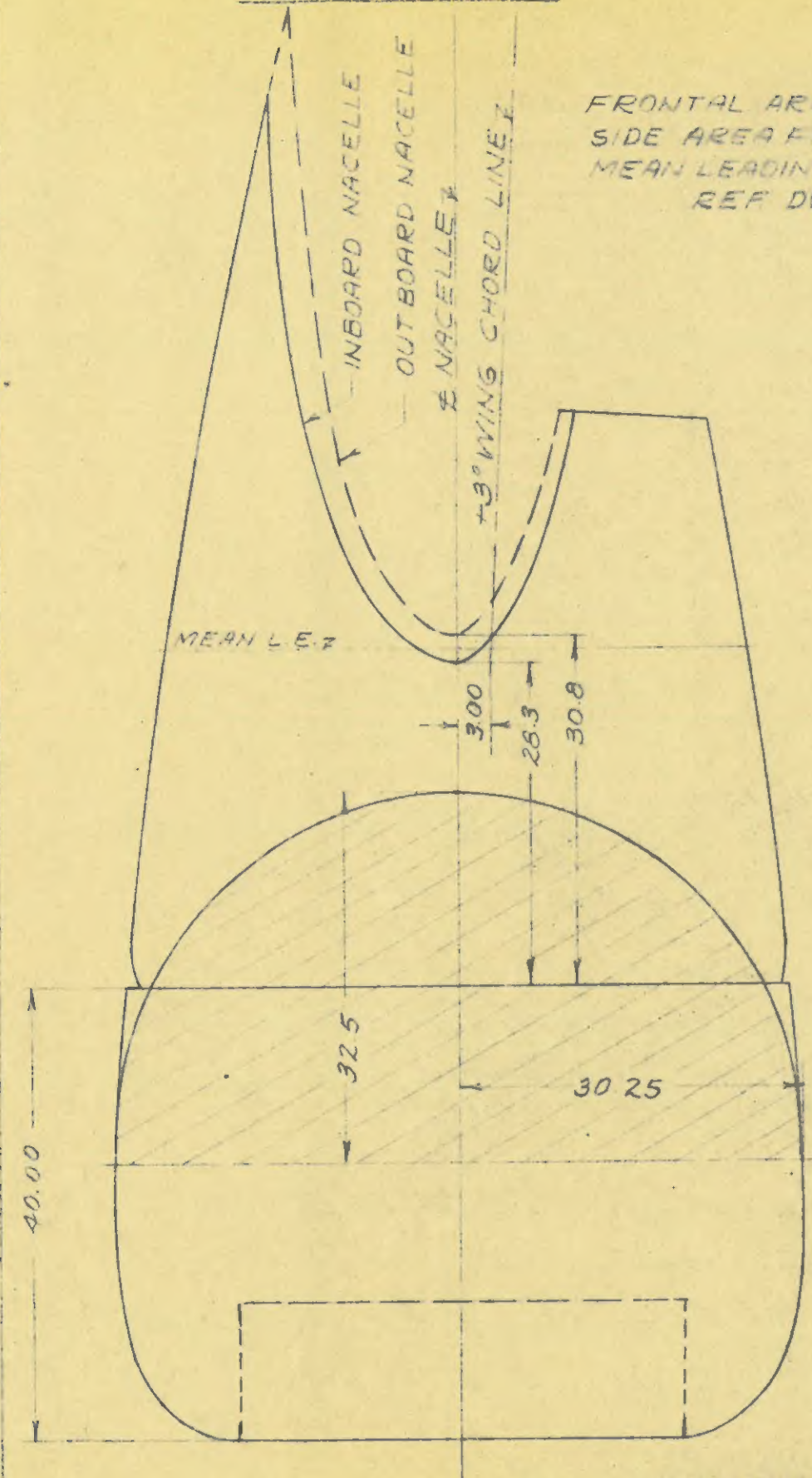
XPB 2Y-1  
NACELLES N AND Nc  
(P. & W. R-1830-66 ENGS)  
1/4 ACTUAL SIZE

BY

CHECKED



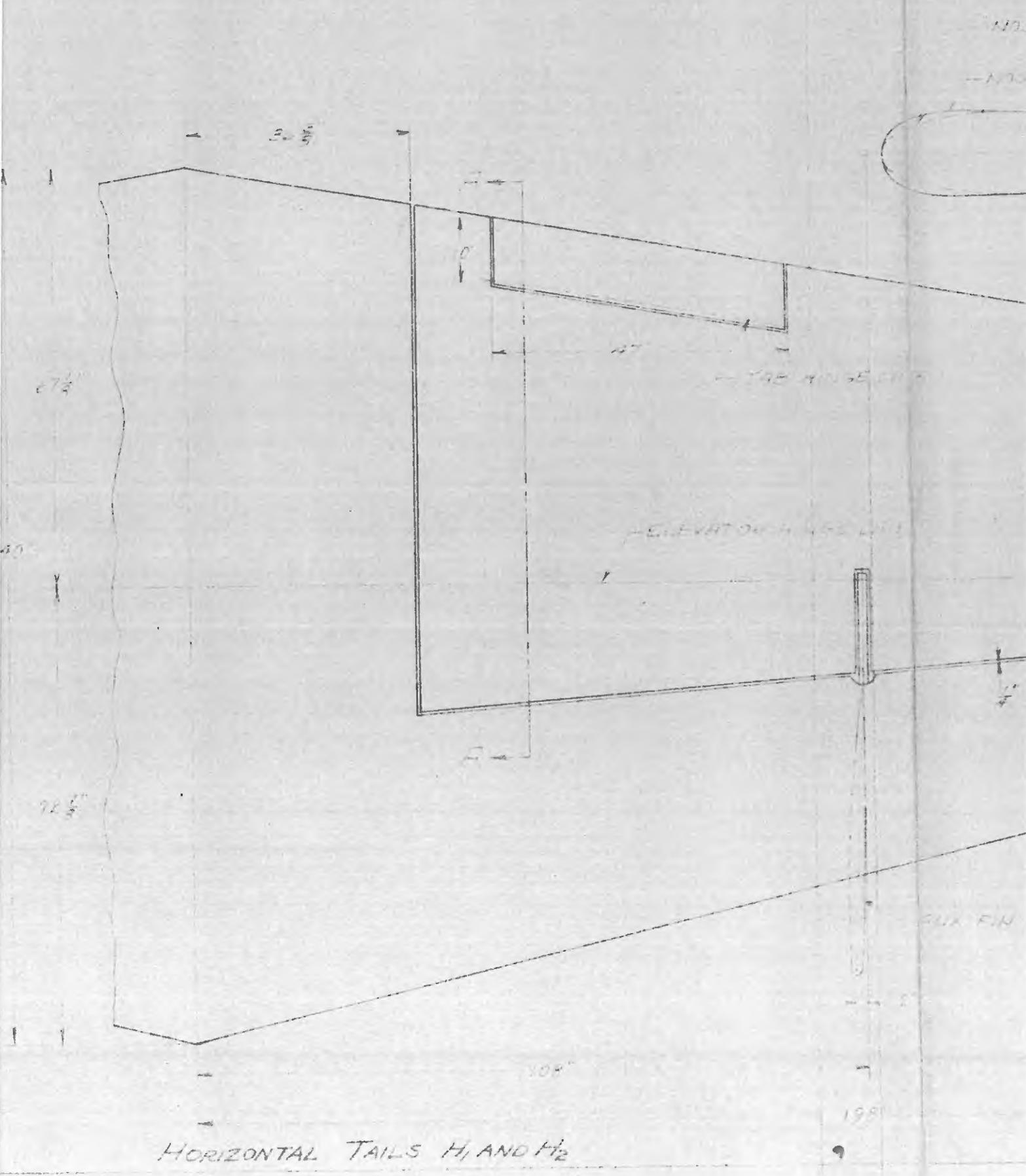
FRONTAL AREA = 21.5 SQ. FT. EACH.  
SIDE AREA FWD. OF  
MEAN LEADING EDGE = 276.50 FT.  
REF DWG. 29Z-92



NACELLES N<sub>2</sub> (P&W 1830-76 ENG 5.)  
XPB2Y-1 PROPOSED PRODUCTION  
MODEL

$\frac{1}{14}$  ACTUAL SIZE  
8-30-58 LEM







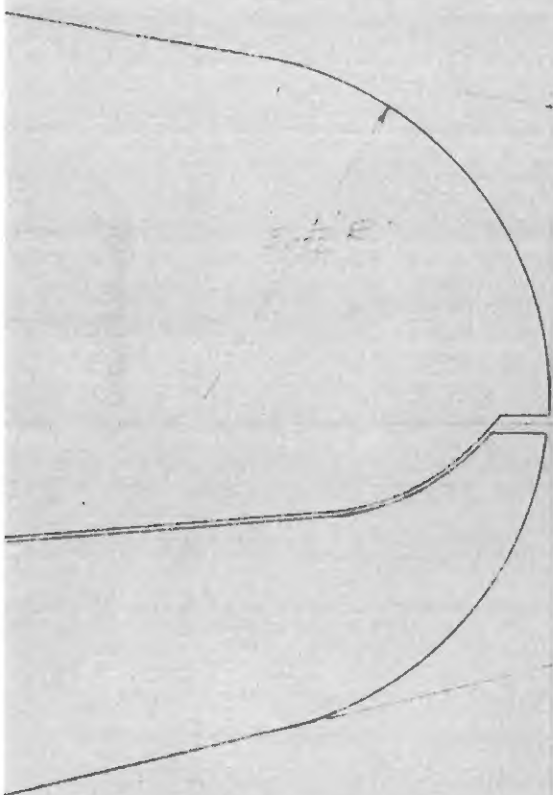
HORIZONTAL TAIL  
XPE2V-1  
SCALE 1:20 240°

CO. 170. 2. H.

W. 100. 11.



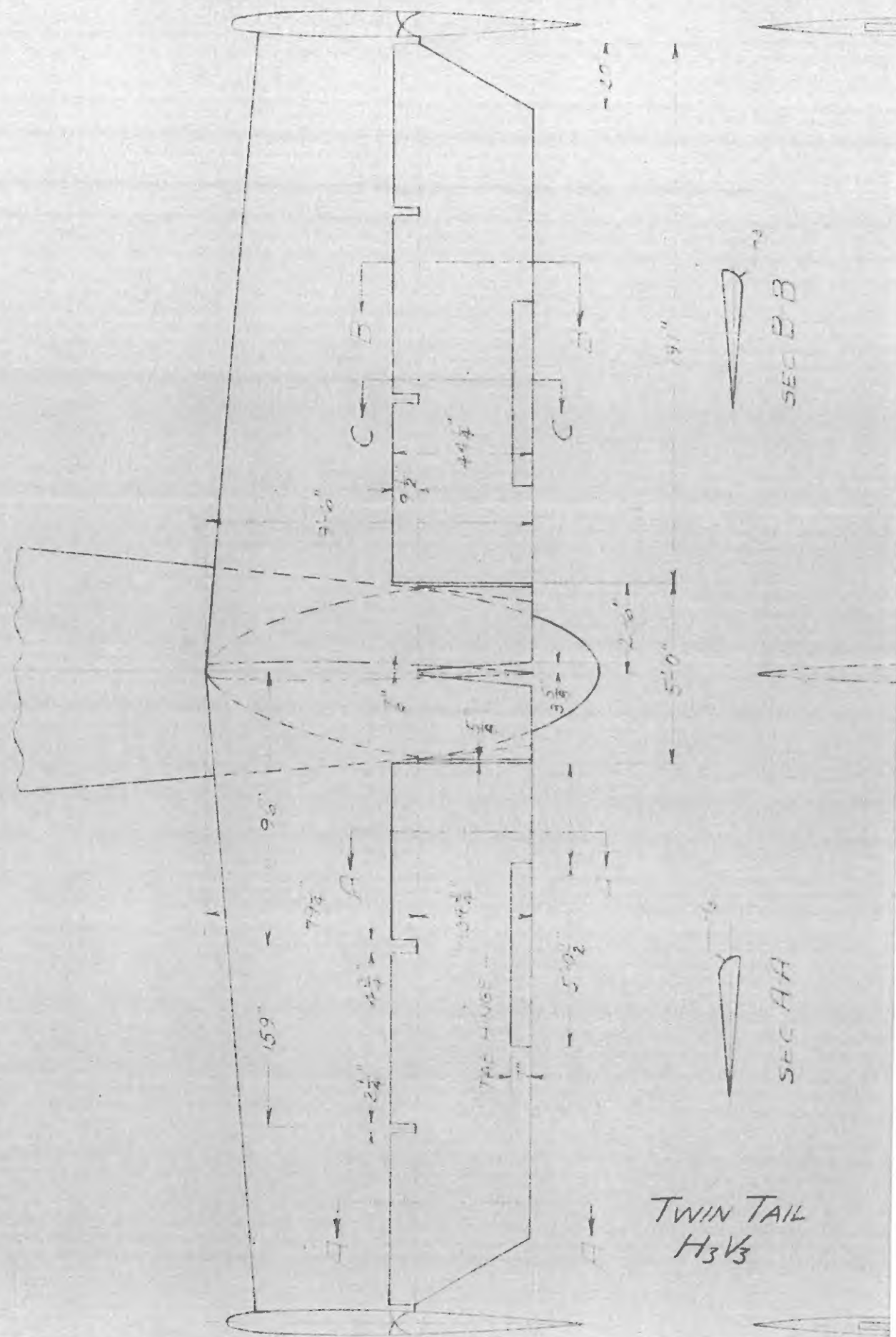
W. 1/2 5. 2. 2.



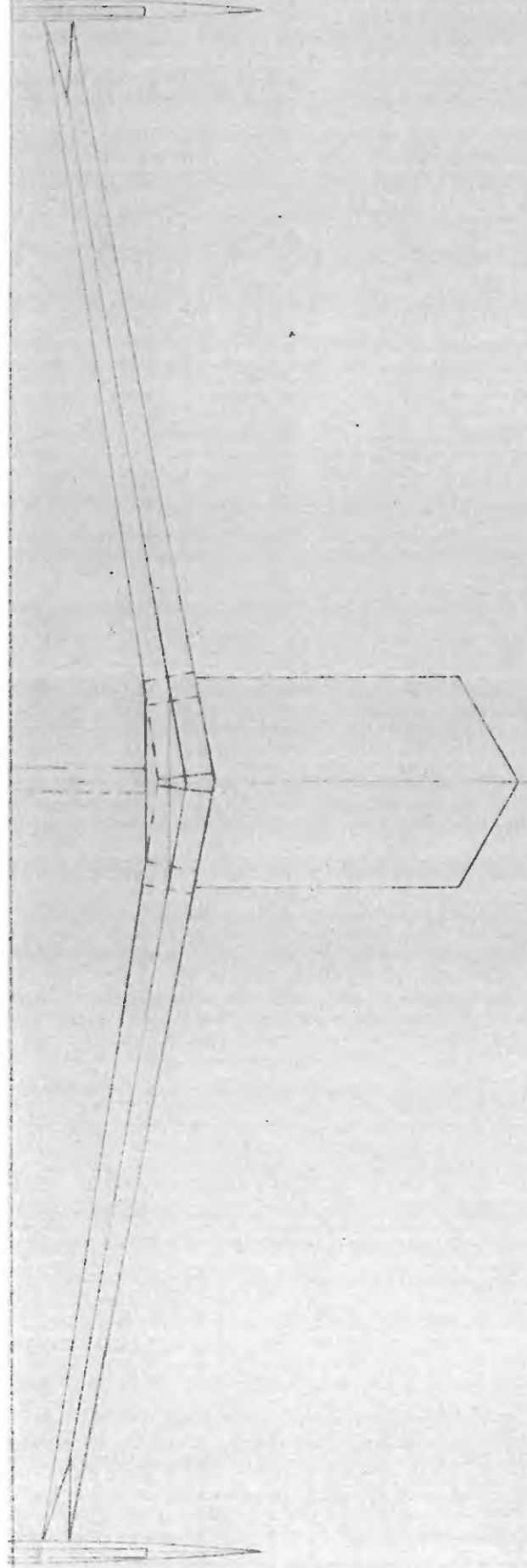
33.465

20.350





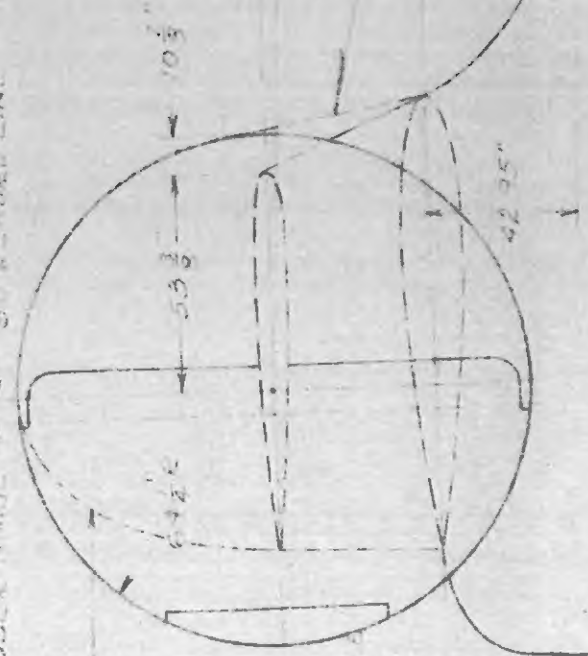




0.85

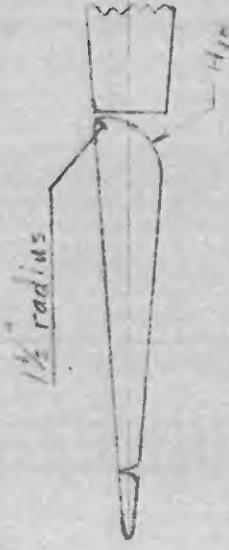
RUDDER HINSE - 60° CHORD LINE

CENTRAL FIN -



NOTE  
ELEMENTS IN THIS DID NOT  
HAVE HINGE CUTS BETWEEN  
BALANCE

Central Fin 3:08 1/2



SEC C-C 1/2 SIZE

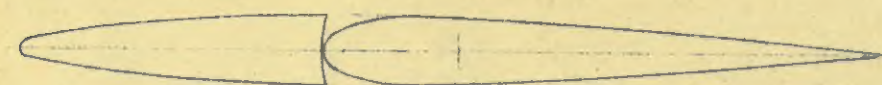
H<sub>1</sub> SAME AS H<sub>3</sub> WITH CUTS FOR HINGES ETC.  
H<sub>2</sub> SAME AS H<sub>3</sub> WITH 1 1/2" RADIUS ON NILE AND  
NO RADIUS ON T.E. OF CHAS. LER

TWIN TAIL (H<sub>3</sub>)  
XPB2Y-1  
GENERAL ARRANGEMENT  
HORIZ. SURFACE DATA  
SCALE 1/4" = 1'-0" & NOTED



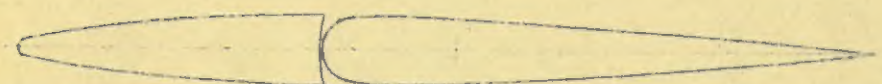
MODEL \_\_\_\_\_ AIRPLANE \_\_\_\_\_

REPORT NO. \_\_\_\_\_



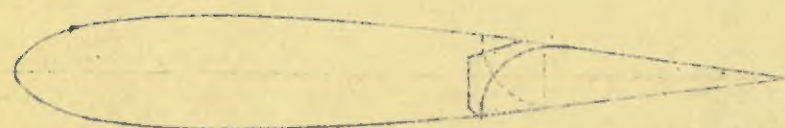
H<sub>1</sub>

22% BALANCE  
POINTED NOSE  
SEE 293041



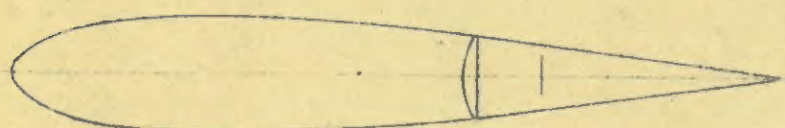
H<sub>2</sub>

22% BALANCE  
ROUNDED NOSE  
SEE 292041



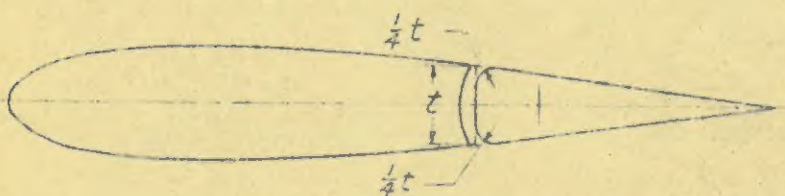
H<sub>3</sub>

22.4% BALANCE  
9 1/2" NOSE LENGTH  
SEE 292040



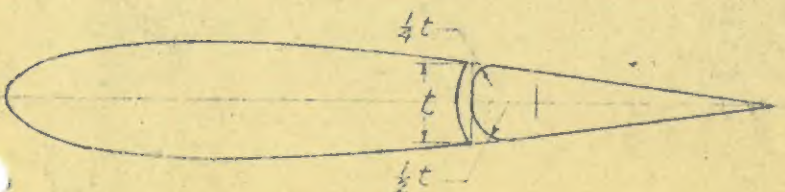
H<sub>4</sub>

22.4% BALANCE  
9 1/2" NOSE LENGTH



H<sub>5</sub>

22.4% BALANCE  
9 1/2" NOSE LENGTH



H<sub>6</sub>

22.4% BALANCE  
9 1/2" NOSE LENGTH

BY \_\_\_\_\_

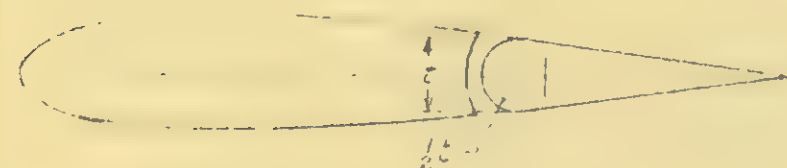
CHECKED \_\_\_\_\_

STABILIZER AND RUDDER PROFILES IN H<sub>1</sub>, H<sub>2</sub>, H<sub>3</sub>, H<sub>4</sub>, H<sub>5</sub>, H<sub>6</sub>

MODEL ..... AIRPLANE

REPORT NO. ....

FIG 11

H<sub>6</sub>+1.5" GAP22.4% BALANCE  
9 1/2" NOSE LENGTHH<sub>7</sub>22.4% BALANCE  
9 1/2" NOSE LENGTHH<sub>8</sub>22.4% BALANCE  
9 1/2" NOSE LENGTHH<sub>9</sub>24.1% BALANCE  
10" TIP  
NOSE LENGTH 11" ROOTSAME AS H<sub>8</sub> EXCEPT FOR  
EXTENSION OF NOSEH<sub>10</sub>27.3% BALANCE  
12" TIP  
NOSE LENGTH 13" ROOTSAME AS H<sub>9</sub> EXCEPT FOR  
EXTENSION OF NOSEH<sub>11</sub>27.3% BALANCE  
12" TIP  
NOSE LENGTH 13" ROOTH<sub>11</sub> = H<sub>10</sub> WITH LOWER NOSE  
REMOVED SO AS NOT TO  
INTERFERE WITH 10° ELEVATOR

BY .....

CHECKED

STABILIZER AND RUDDER PROFILES IN H<sub>6</sub>+1.5" GAP, H<sub>7</sub>, H<sub>8</sub>, H<sub>9</sub>, H<sub>10</sub>, H<sub>11</sub>



MODEL

AIRPLANE

REPORT NO.

56



H12

27.9

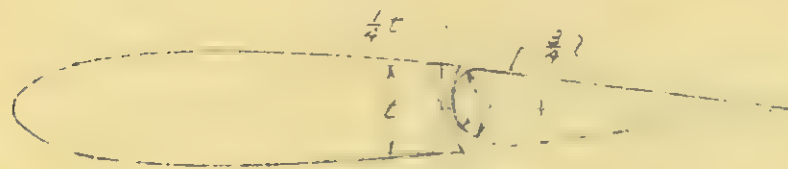
7.5" x 1.5" x 1.5"  
Part of H12



H13

27.9

7.5" x 1.5" x 1.5"  
Part of H13



H14

27.9

1/4" x 1/4" x 1/4"  
Part of H14



H15

27.9

1/4" x 1/4" x 1/4"  
Part of H15



H16

27.9

H16 - H16 WITH WAX OUT FROM  
UNDER STABILIZER



H17

27.9

7.5" x 1.5" x 1.5"  
Part of H17

BY

CHECKED

STABILIZER AND RUDDER PROFILES IN H12, H13, H14, H15, H16, H17



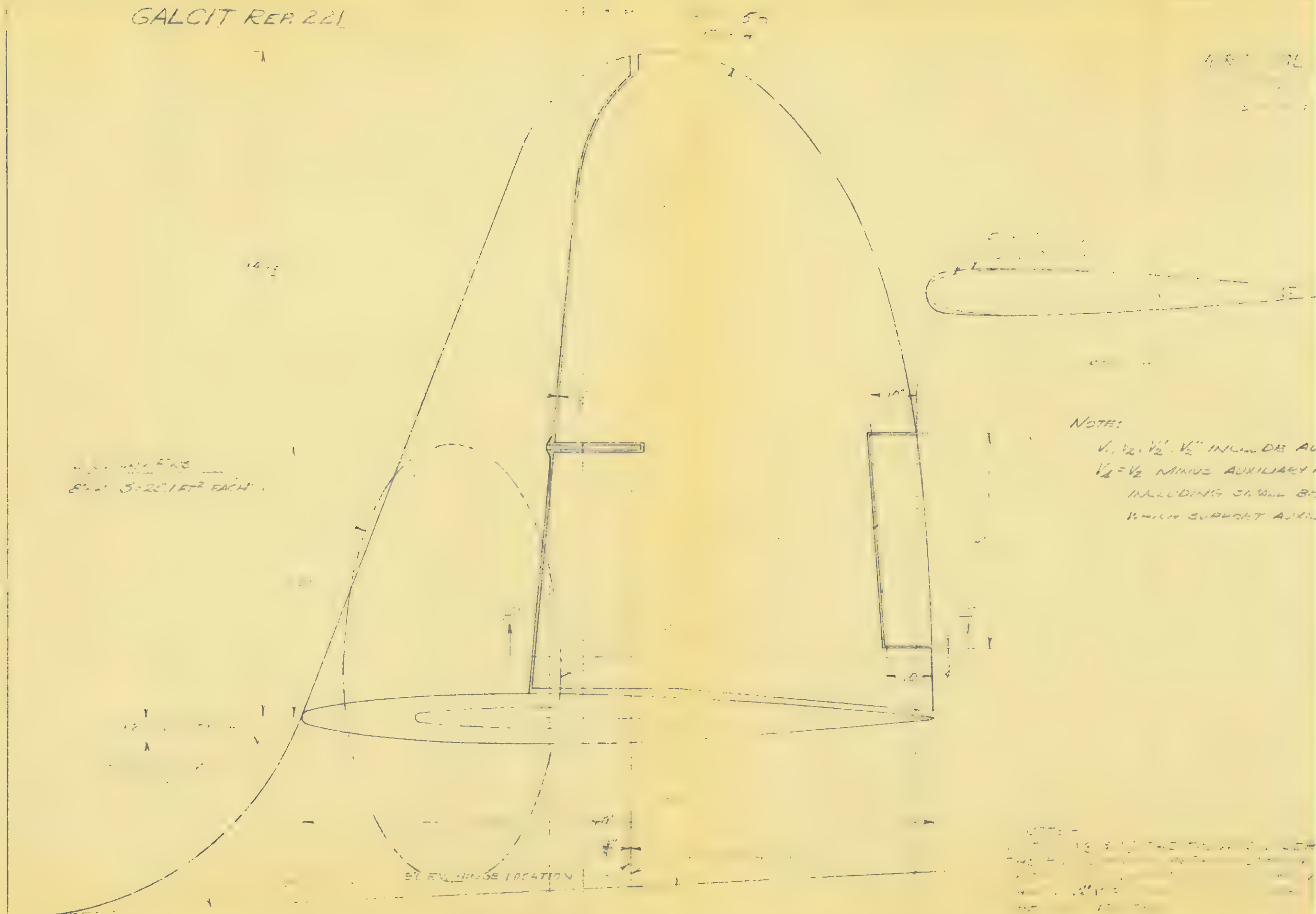
21.7% BALANCE  
SAME AS  $H_9$ , WITH  
HINGE CUT OFF



21.4% BALANCE  
SAME AS  $H_9$ , WITH  
 $1\frac{1}{2}$ " FADDS ON TOP  
OF NOSE

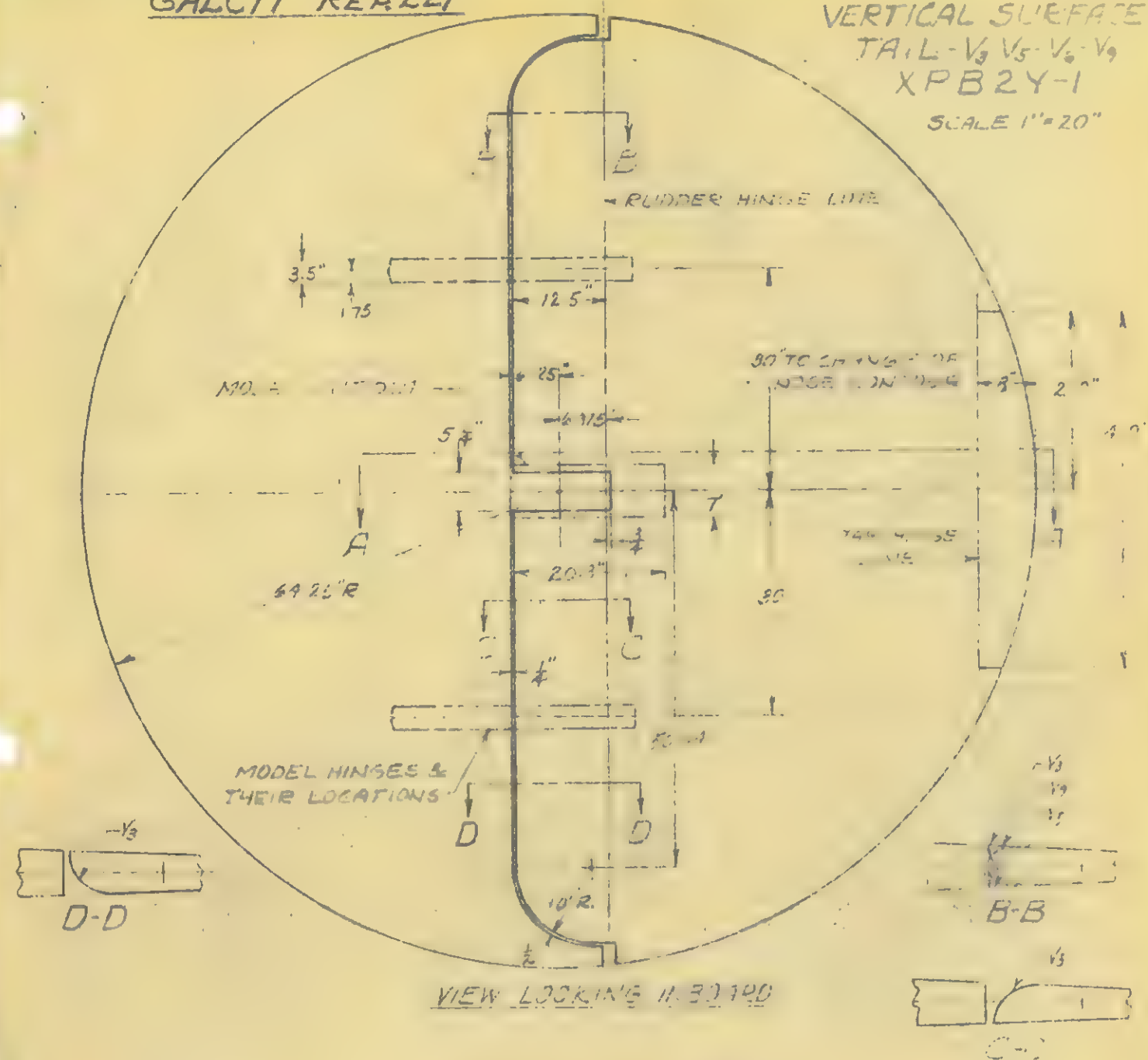


GALCIT REP. 221



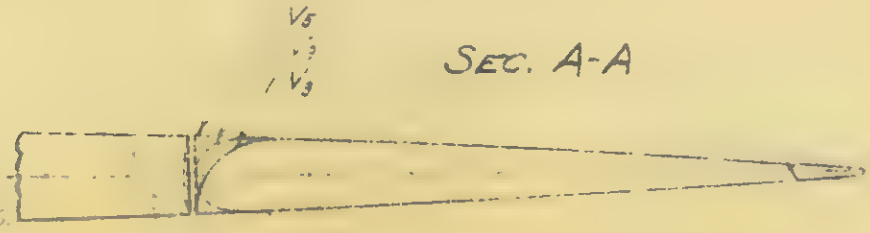
GALCIT REP. 221

VERTICAL SURFACE  
TAIL-V<sub>3</sub>-V<sub>5</sub>-V<sub>6</sub>-V<sub>9</sub>  
XPB2Y-1  
SCALE 1"=20"



V<sub>6</sub> = V<sub>3</sub> + CENTRAL FIN  
V<sub>9</sub> SAME AS V<sub>3</sub> BUT WITH NO HINGE CUTOUTS  
AND CORRECT SIZE CENTER CUTOUT

NOTE -  
V<sub>3</sub>, V<sub>5</sub>, V<sub>6</sub> & V<sub>9</sub> HAD HINGES  
& CENTER CUT-OUT AS  
SHOWN BY PHANTOM LINES.



VERTICAL TAIL SURFACES V<sub>3</sub>, V<sub>5</sub>, V<sub>6</sub>, AND V<sub>9</sub>



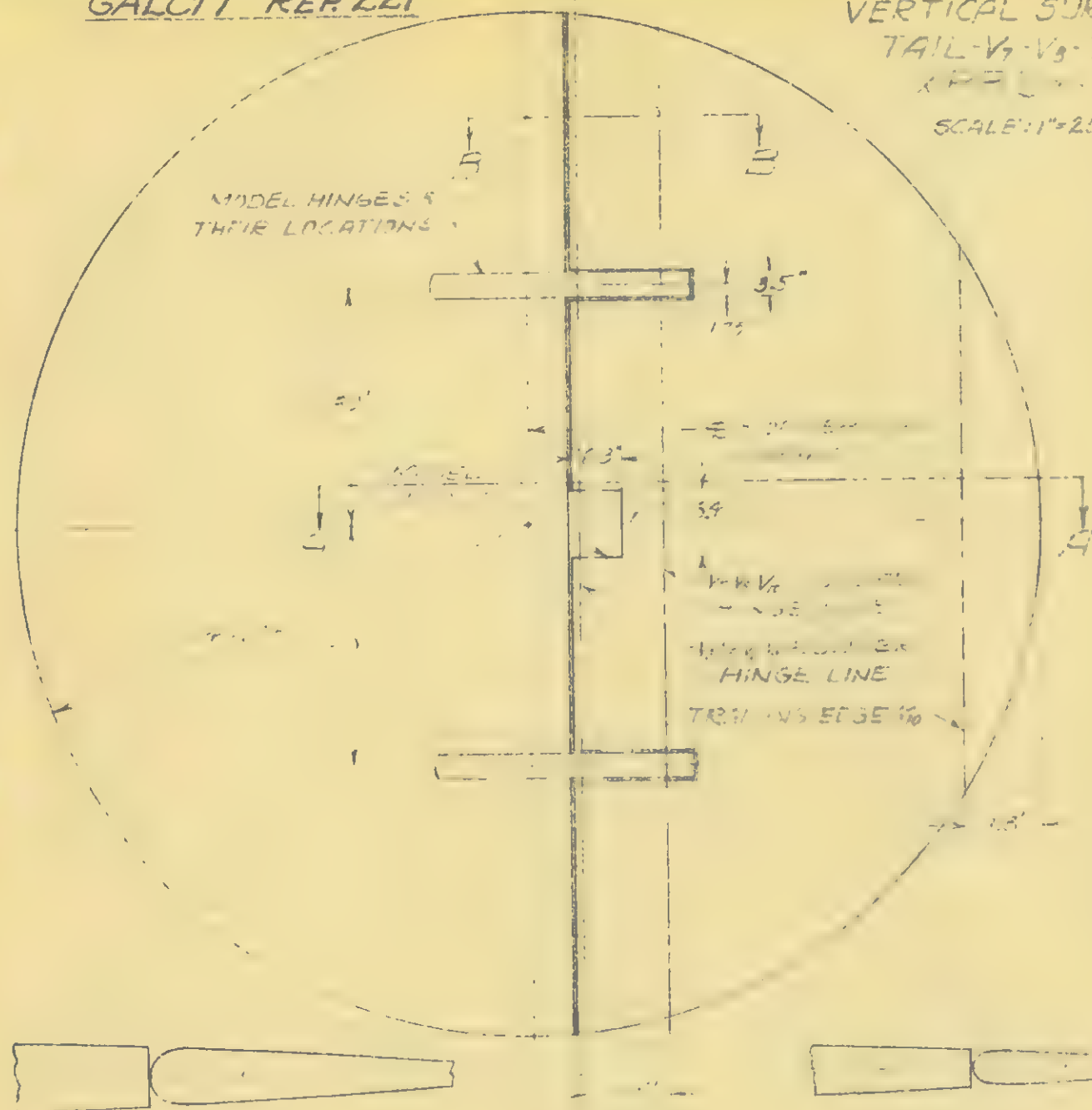
GALCIT RER. 221

VERTICAL SURFACE

TAIL- $V_7$ - $V_8$ - $V_{10}$ 

REF. 10

SCALE: 1"=20"



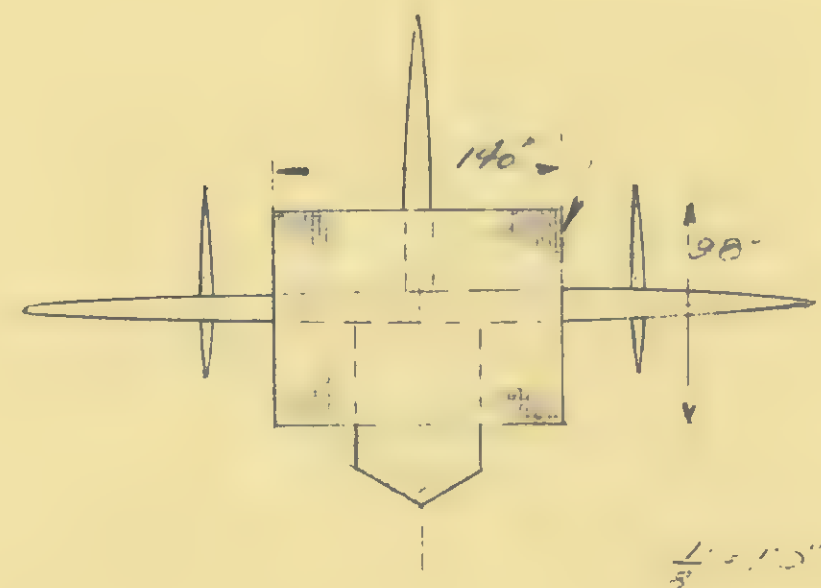
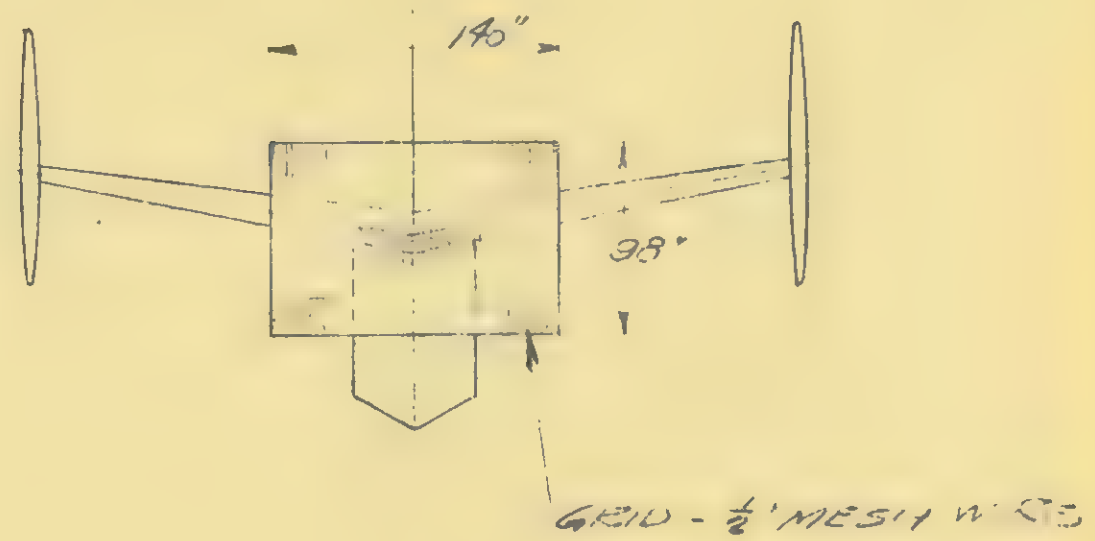
SEC. H A

SEC. E B

NOTE:  $V_7 = V_8 + \text{CENTRAL VERTICAL SURFACE}$ 

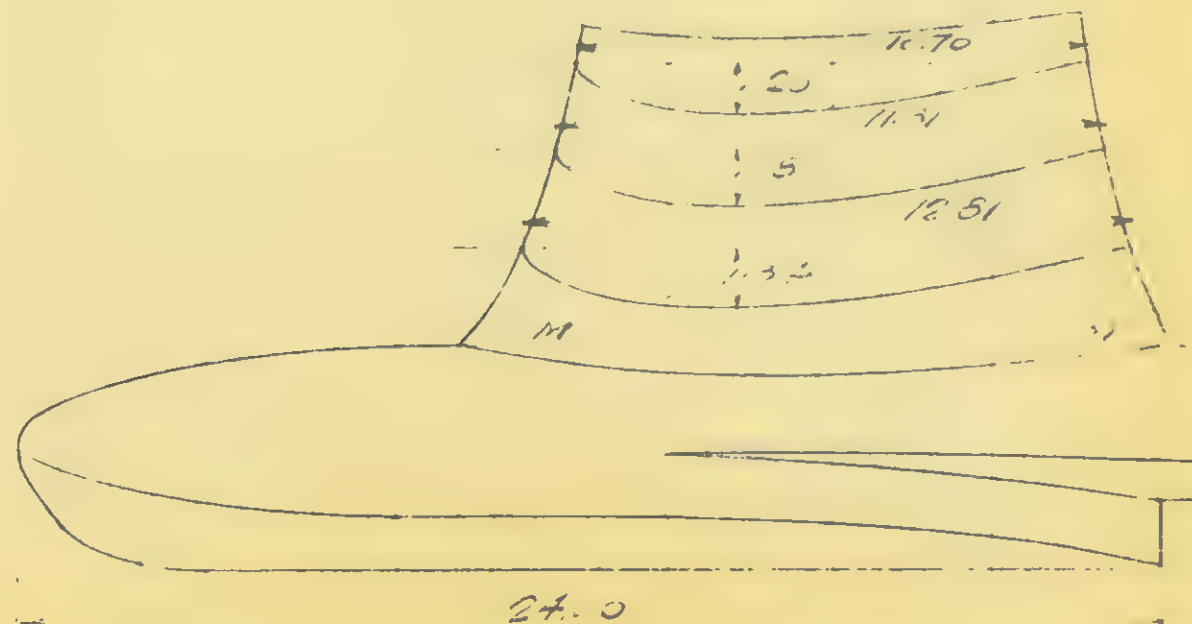
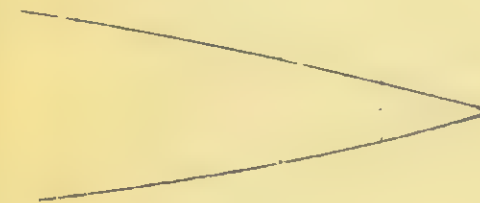
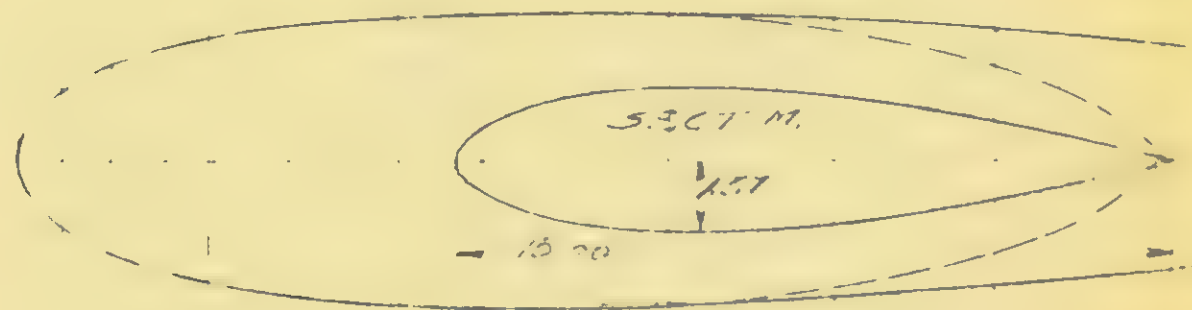
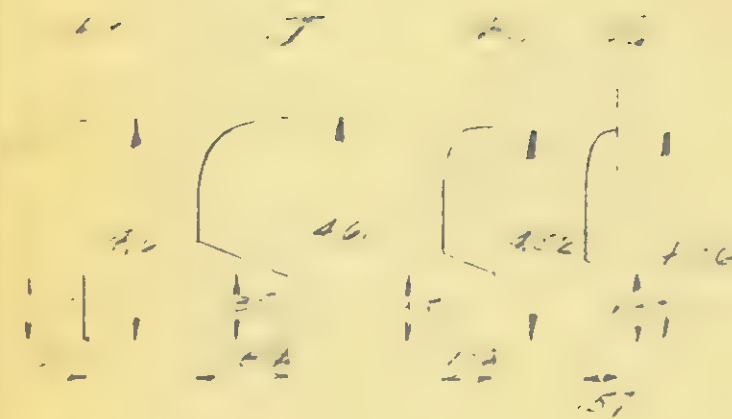
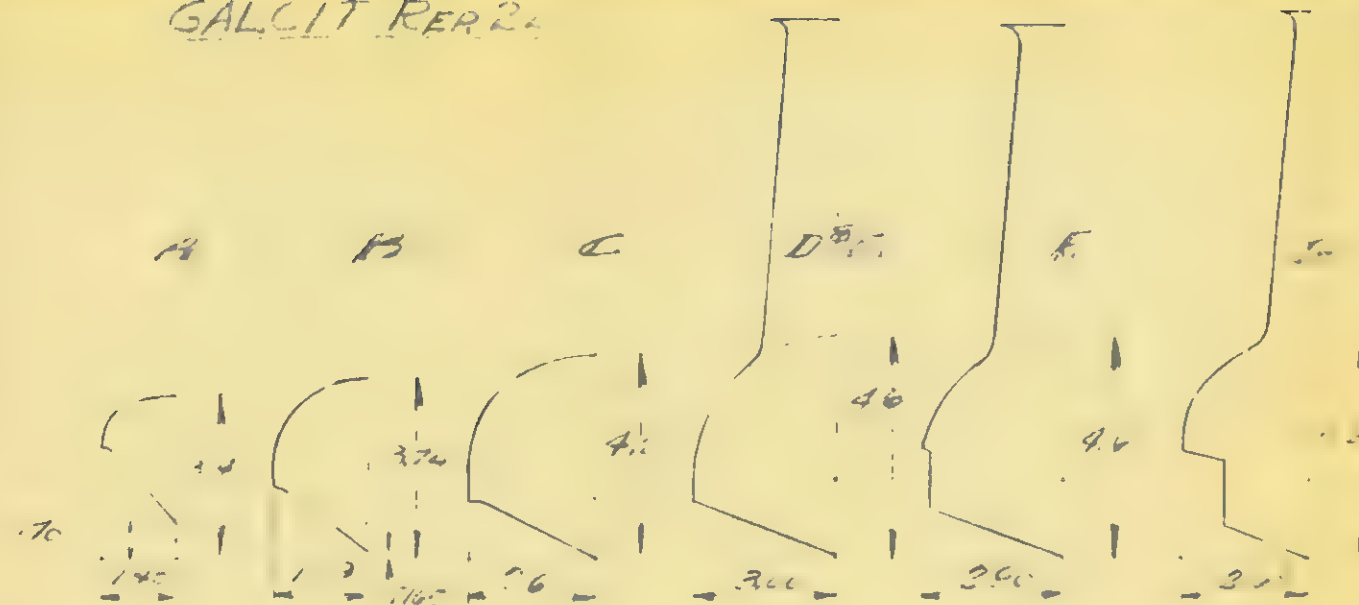
ACTUAL AREA OF RUDDER, AFT OF HINGE, IN  $V_{10}$  IS  
 27.00  $\text{FT}^2$  (EACH). NOMINAL AREA AND CHORD SAME AS  
 IN  $V_8$ , HAVE BEEN USED IN COMPUTING  $C_H$

VERTICAL TAIL SURFACES  $V_7, V_8, V_{10}$


$$\frac{4.515''}{3}$$

1.1.10 G TO SIMULATE CATHETERIZATION  
1.1.11 7% (100%)





Feb 1891

100 7. 1. 1. 20.6 5. 1  
32. 1. 1. 15. 16

179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 841. 842. 843. 844. 845. 846. 847. 848. 849. 850. 851. 852. 853. 854. 855. 856. 857. 858. 859. 860. 861. 862. 863. 864. 865. 866. 867. 868. 869. 870. 871. 872. 873. 874. 875. 876. 877. 878. 879. 880. 881. 882. 883. 884. 885. 886. 887. 888. 889. 890. 891. 892. 893. 894. 895. 896. 897. 898. 899. 900. 901. 902. 903. 904. 905. 906. 907. 908. 909. 910. 911. 912. 913. 914. 915. 916. 917. 918. 919. 920. 921. 922. 923. 924. 925. 926. 927. 928. 929. 930. 931. 932. 933. 934. 935. 936. 937. 938. 939. 940. 941. 942. 943. 944. 945. 946. 947. 948. 949. 950. 951. 952. 953. 954. 955. 956. 957. 958. 959. 960. 961. 962. 963. 964. 965. 966. 967. 968. 969. 970. 971. 972. 973. 974. 975. 976. 977. 978. 979. 980. 981. 982. 983. 984. 985. 986. 987. 988. 989. 990. 991. 992. 993. 994. 995. 996. 9

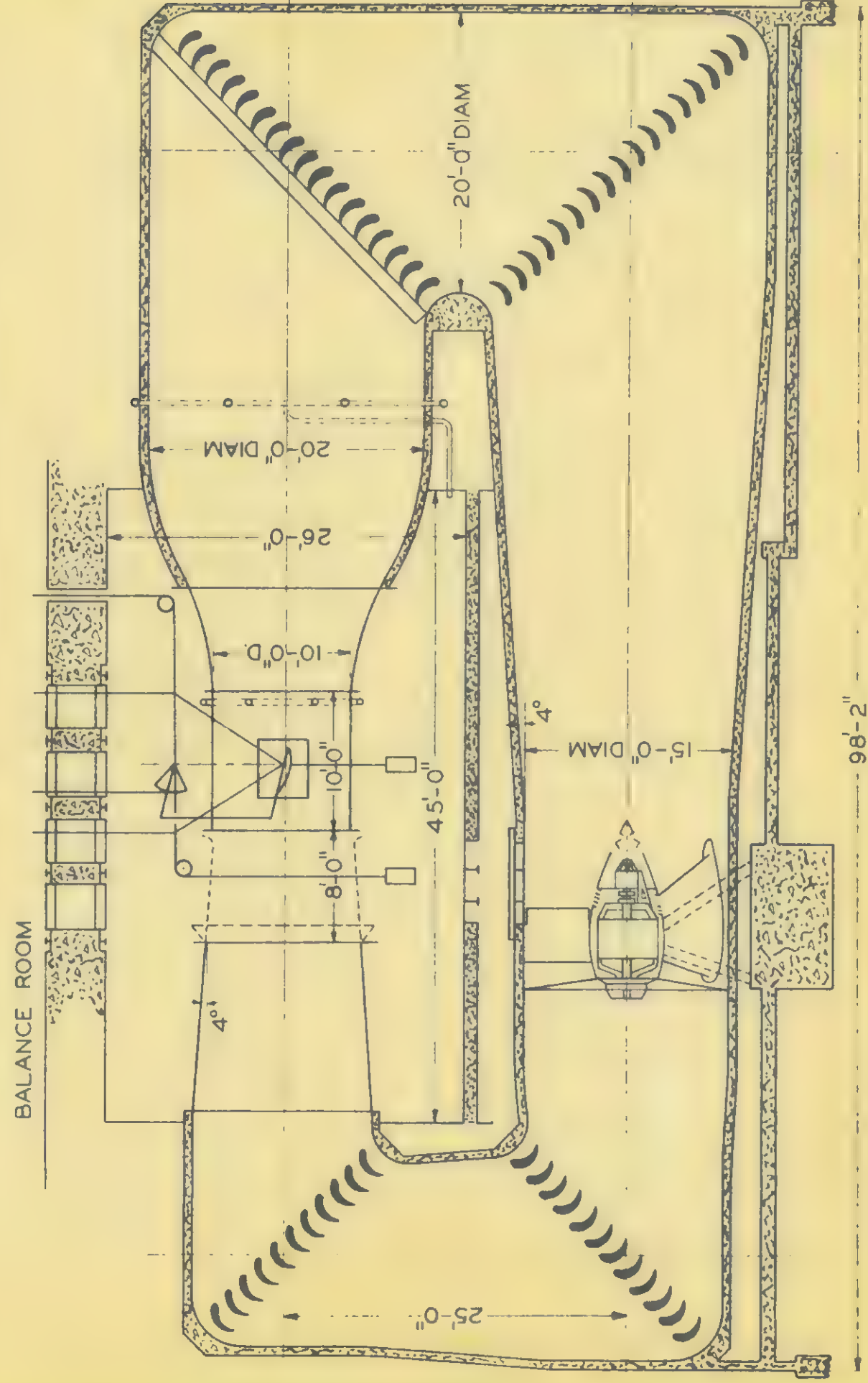
5. 1. 1954 25-8

NACA 110735

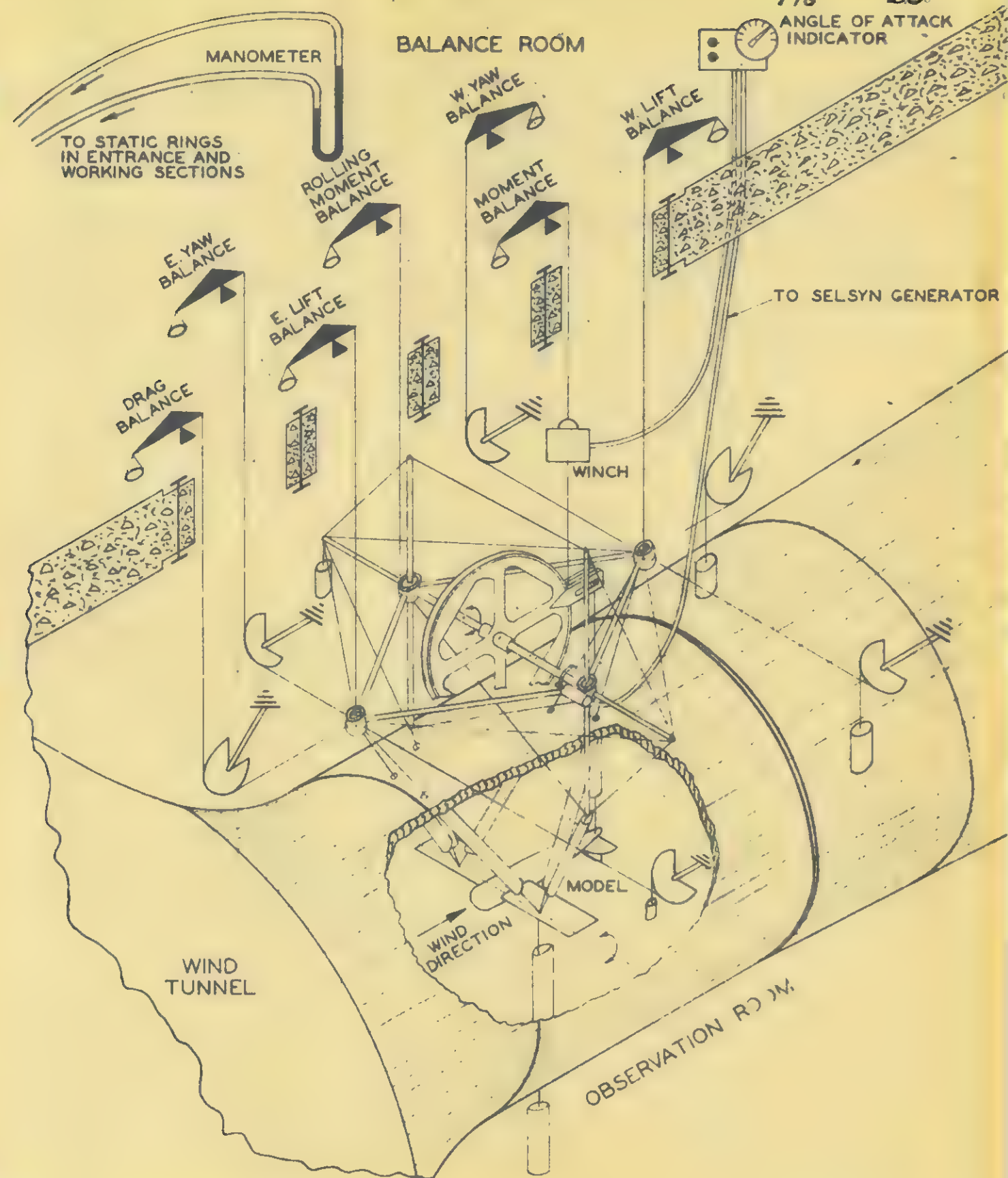
2001 FICAT

— 10 —

VERTICAL SECTION THROUGH 10 FT. WIND TUNNEL  
GUGGENHEIM AERONAUTICS LABORATORY  
CALIFORNIA INSTITUTE OF TECHNOLOGY, PASADENA







SIX COMPONENT SETUP FOR TEN FOOT WIND TUNNEL TESTS  
AT GUGGENHEIM AERONAUTICS LABORATORY  
CALIFORNIA INSTITUTE OF TECHNOLOGY

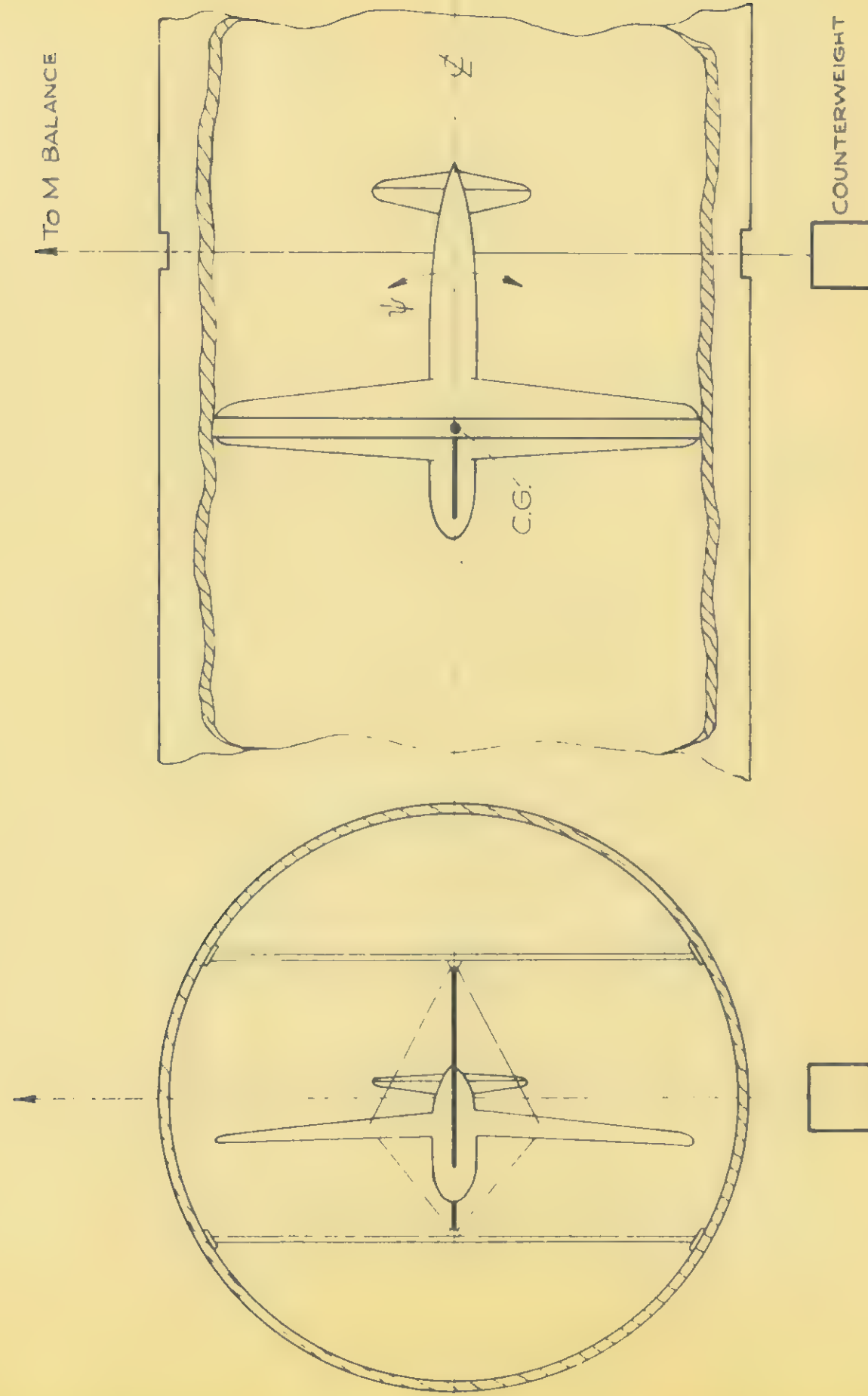


DIAGRAM SHOWING RIGGING FOR YAW-AT-YAW



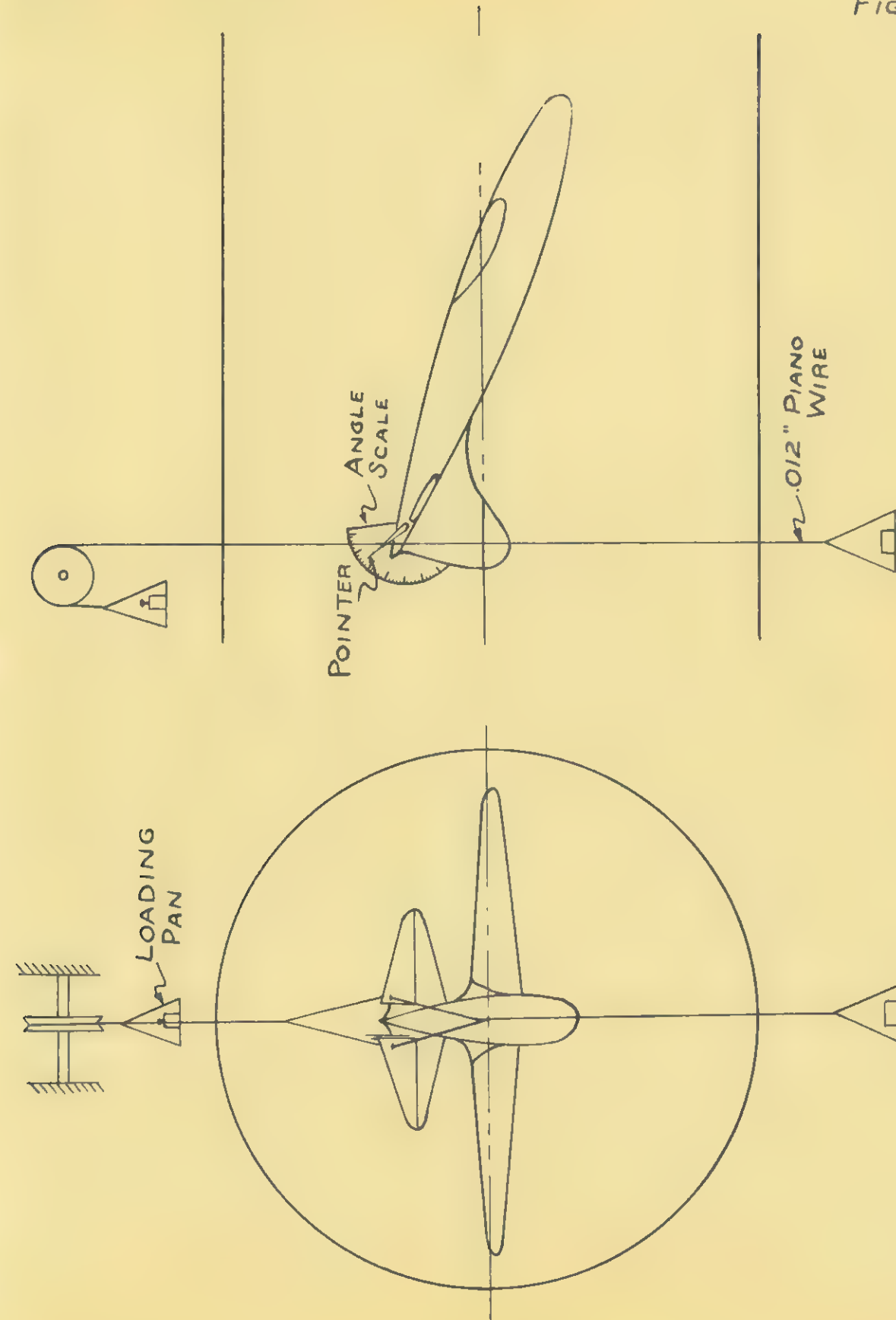
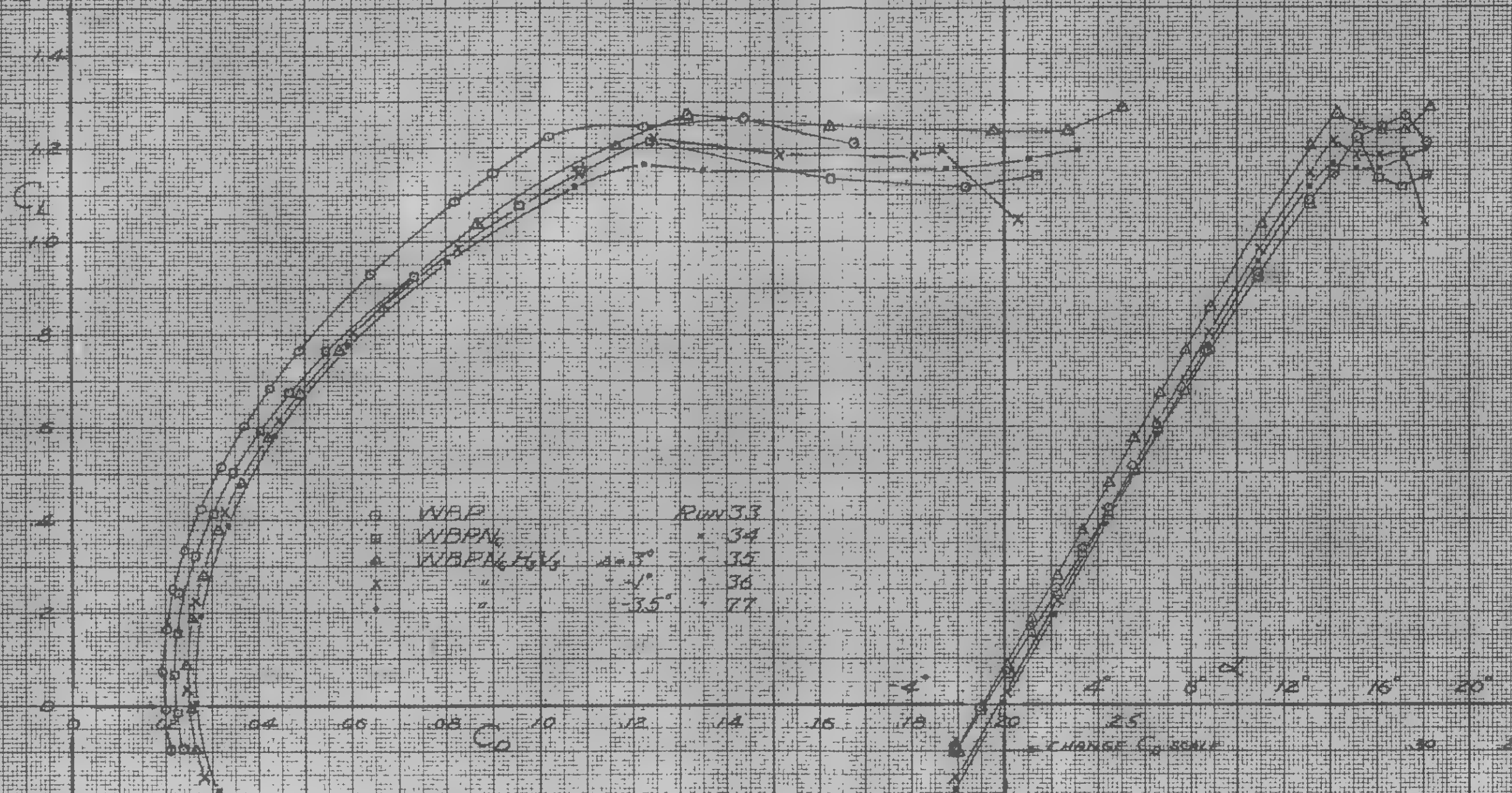
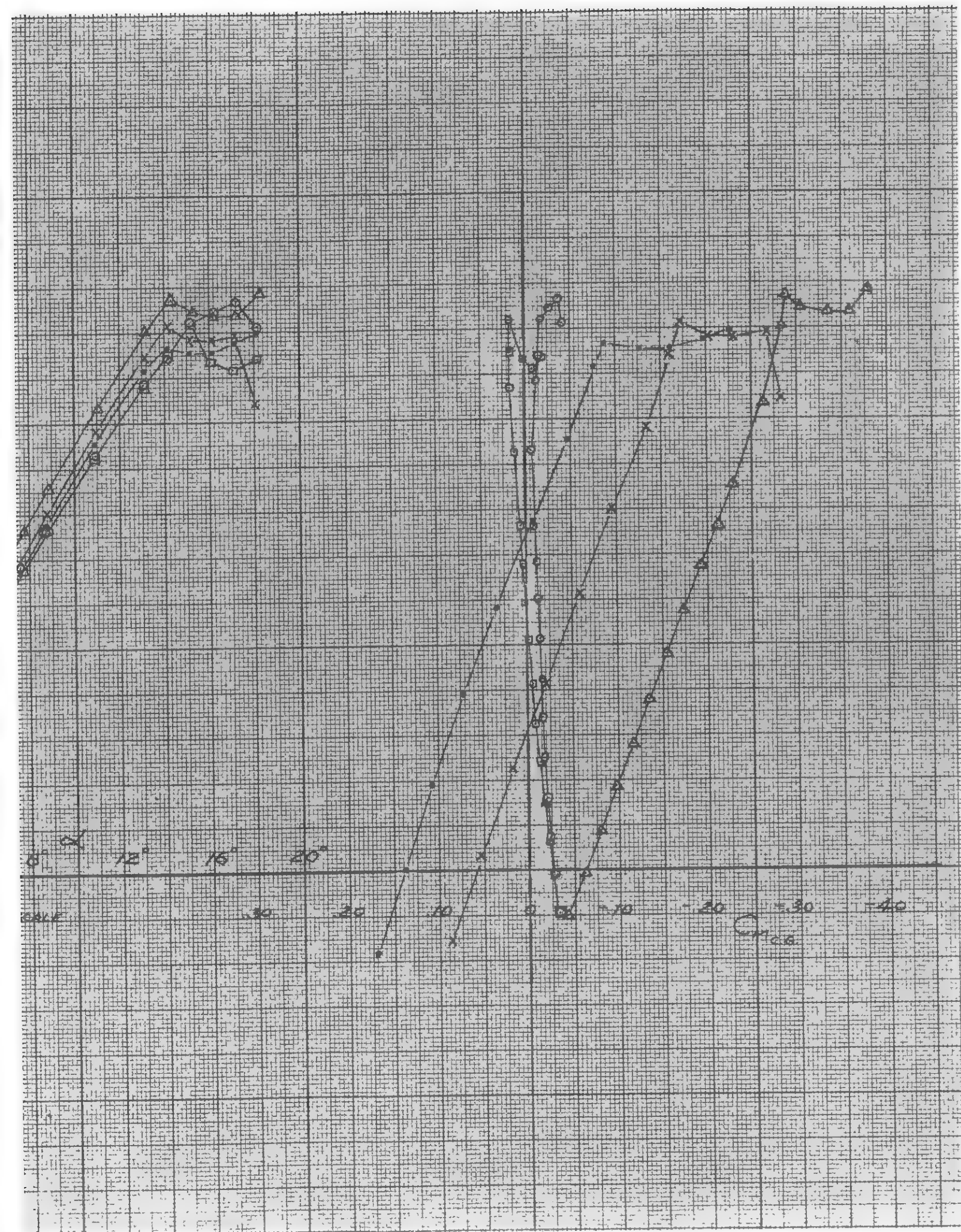


DIAGRAM SHOWING ELEVATOR  
HINGE MOMENT SETUP



EFFECT OF NACELLES AND OF  $H_2V_3$  WITH  
VARIOUS STABILIZER SETTINGS  
THREE COMPONENT DATA







O WBP  
 Δ WBP N<sub>6</sub>  
 Δ WBP N<sub>6</sub> H<sub>3</sub> V<sub>2</sub> A = 30°  
 X " " " = -10°  
 • " " " = -3.5°

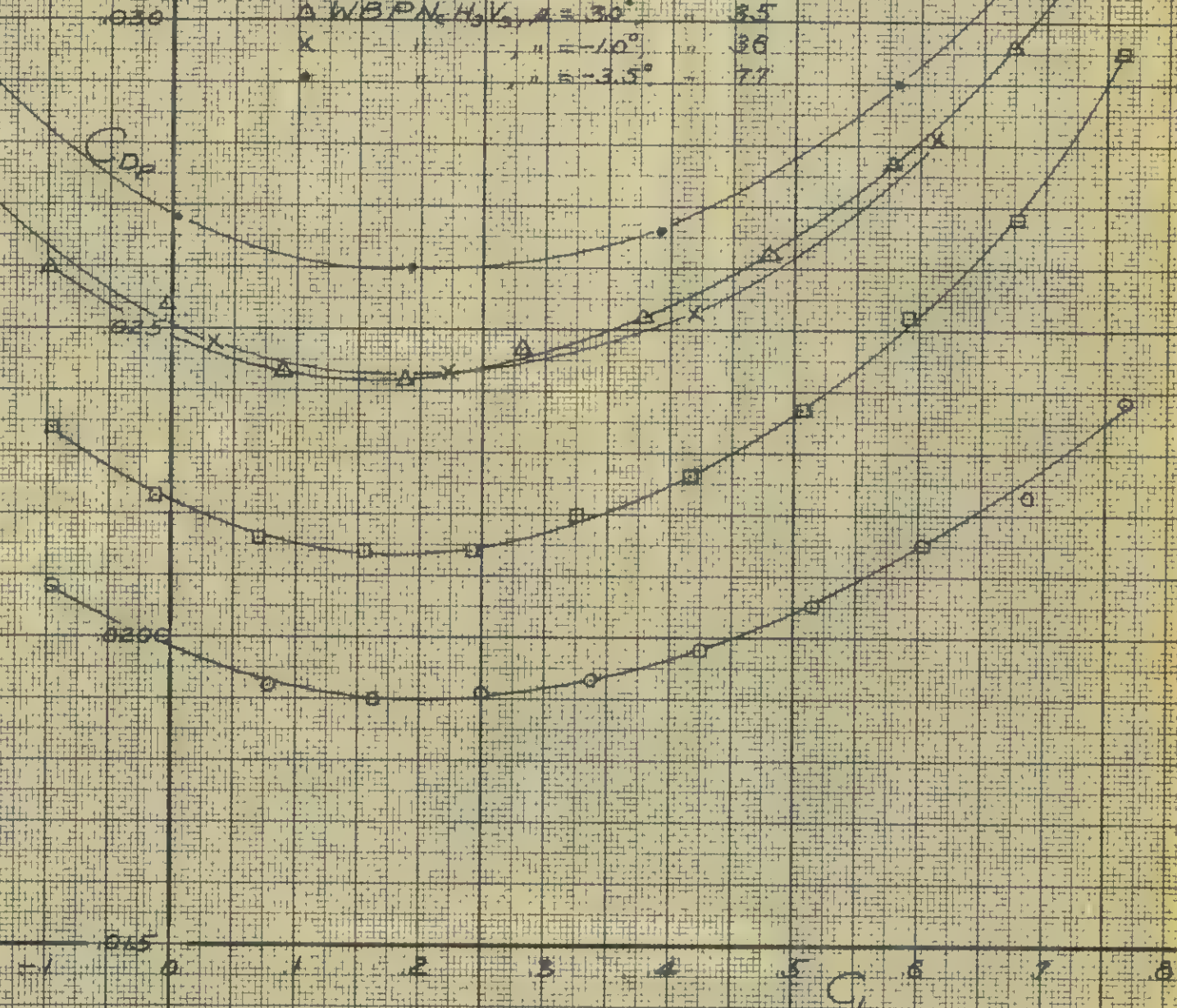
Run 33

" 34

" 35

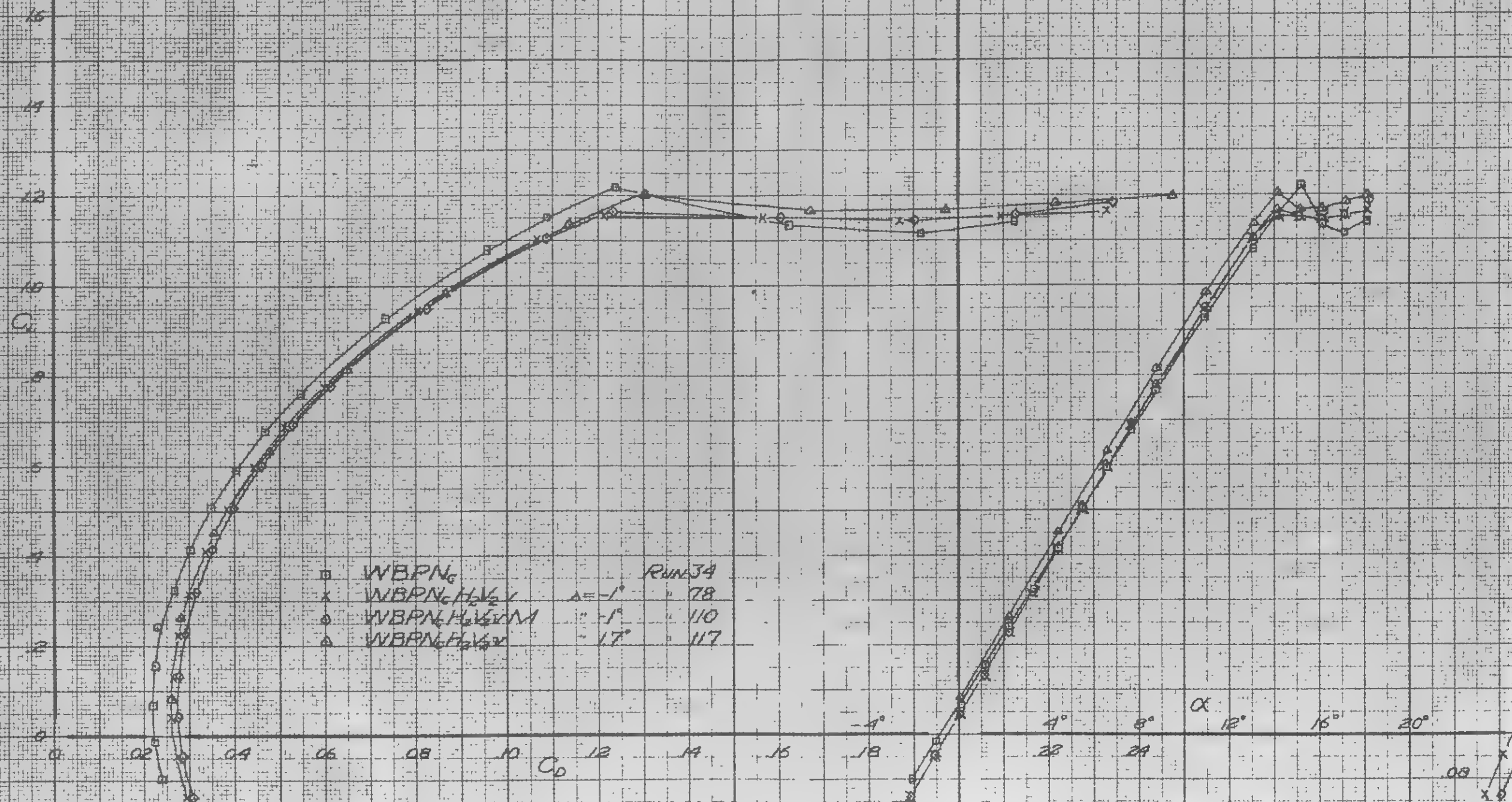
" 36

" 77

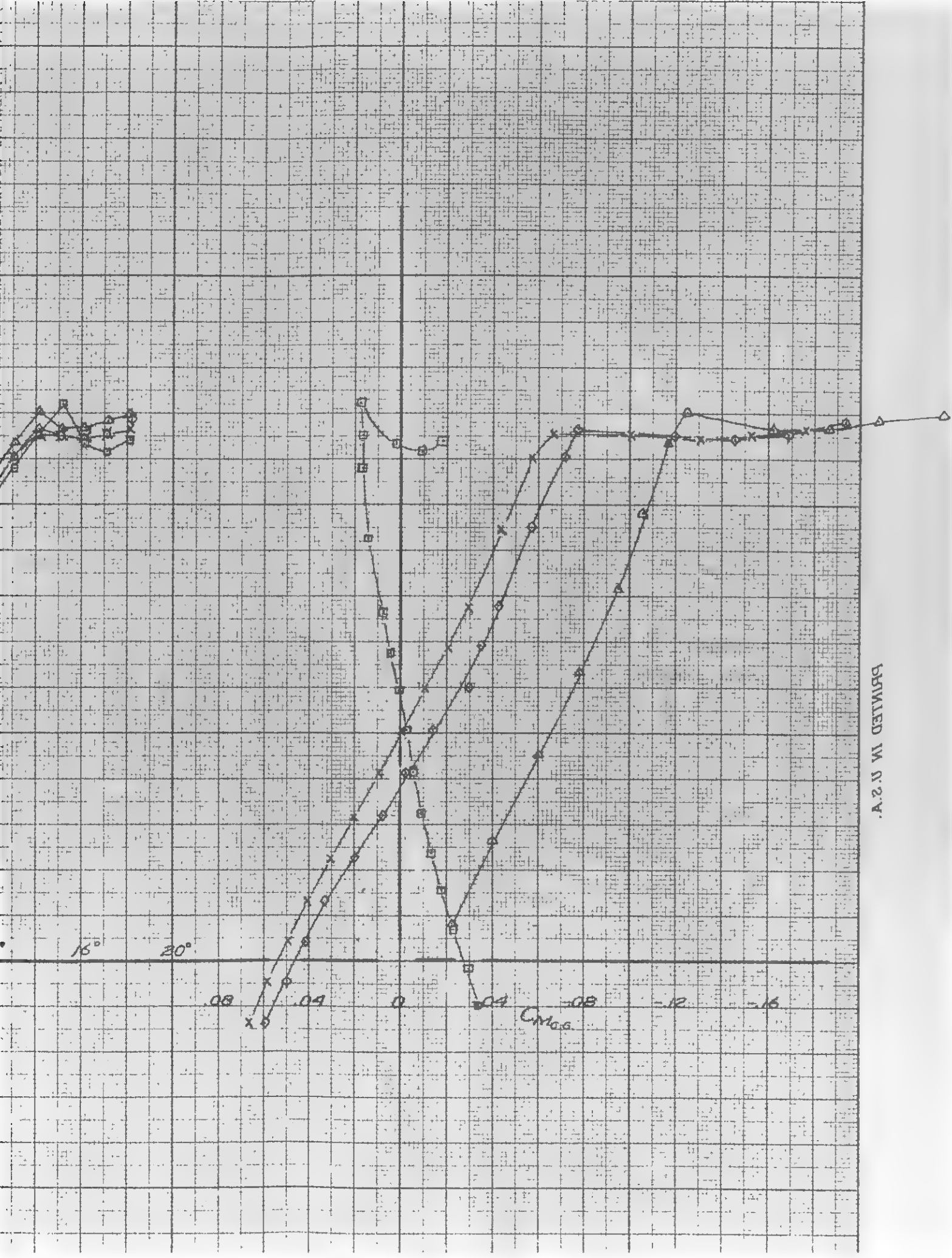


EFFECT OF NAGELLES AND OF H<sub>3</sub>V<sub>2</sub> WITH VARIOUS  
 STABILIZER SETTINGS  
 PARASITE DRAG



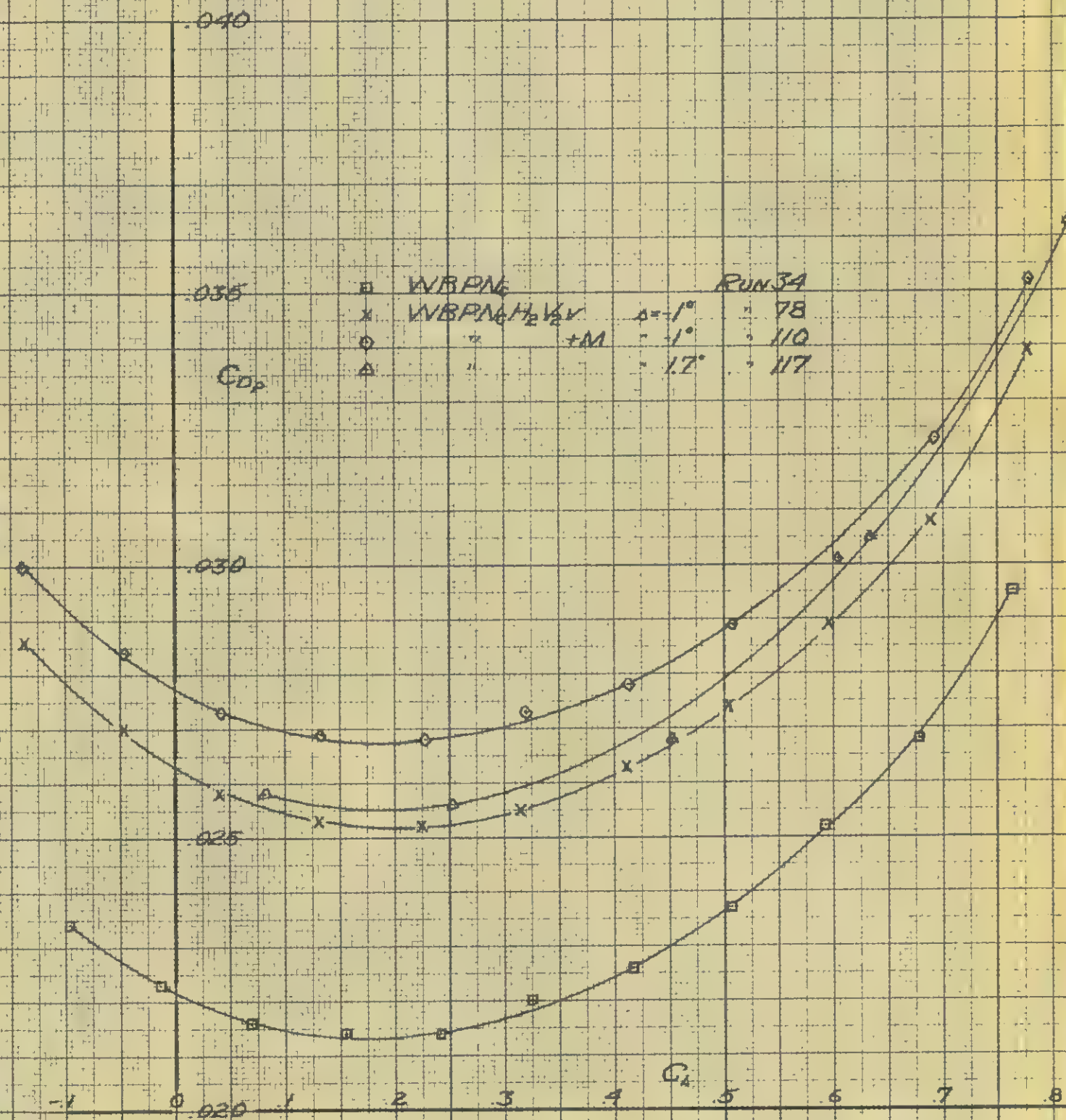


EFFECT OF  $H_e/V_v$  WITH VARIOUS STABILIZER  
SETTINGS, AND EFFECT OF  $M$   
THREE COMPONENT DATA



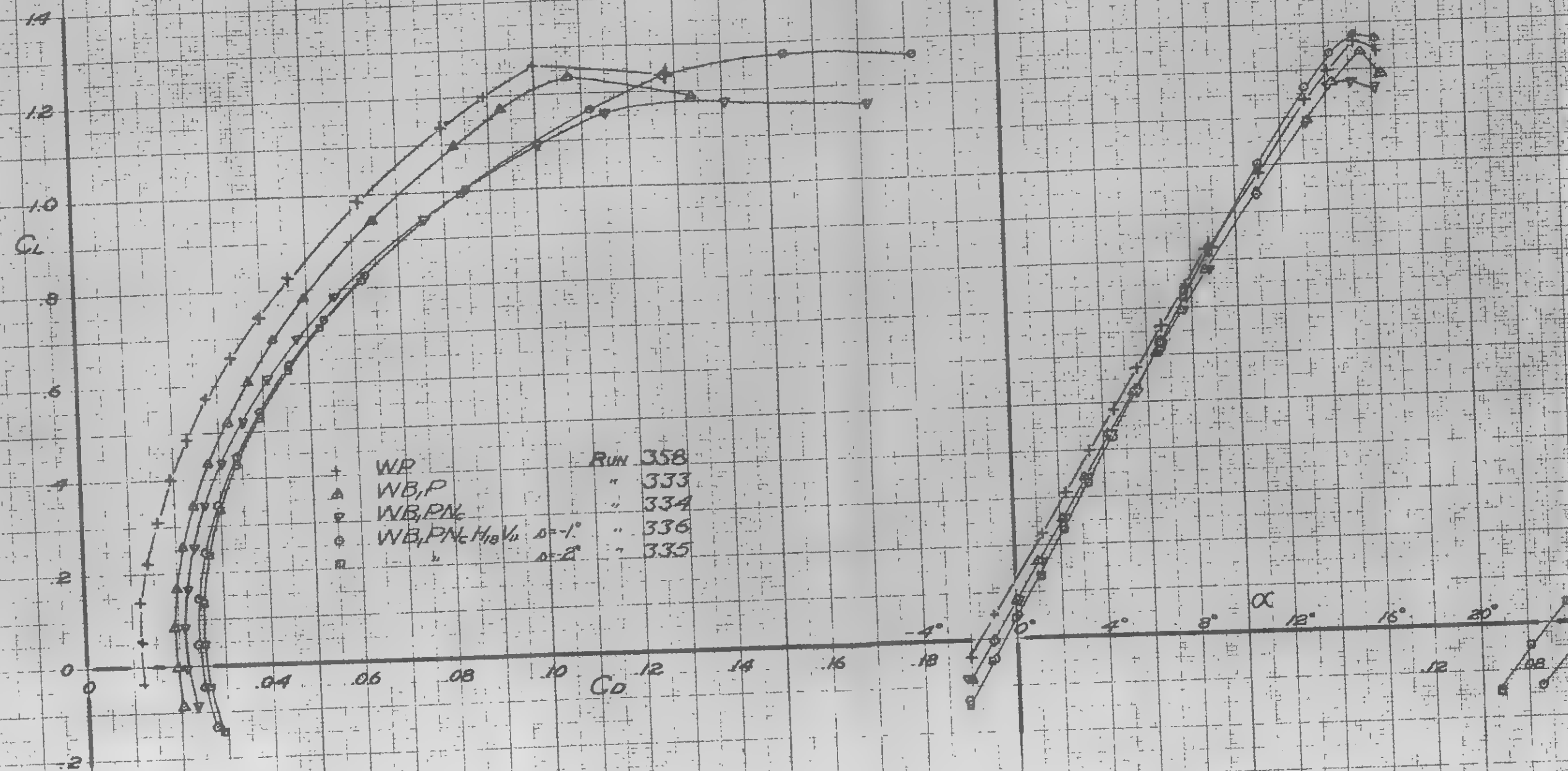
PRINTED IN U.S.A.





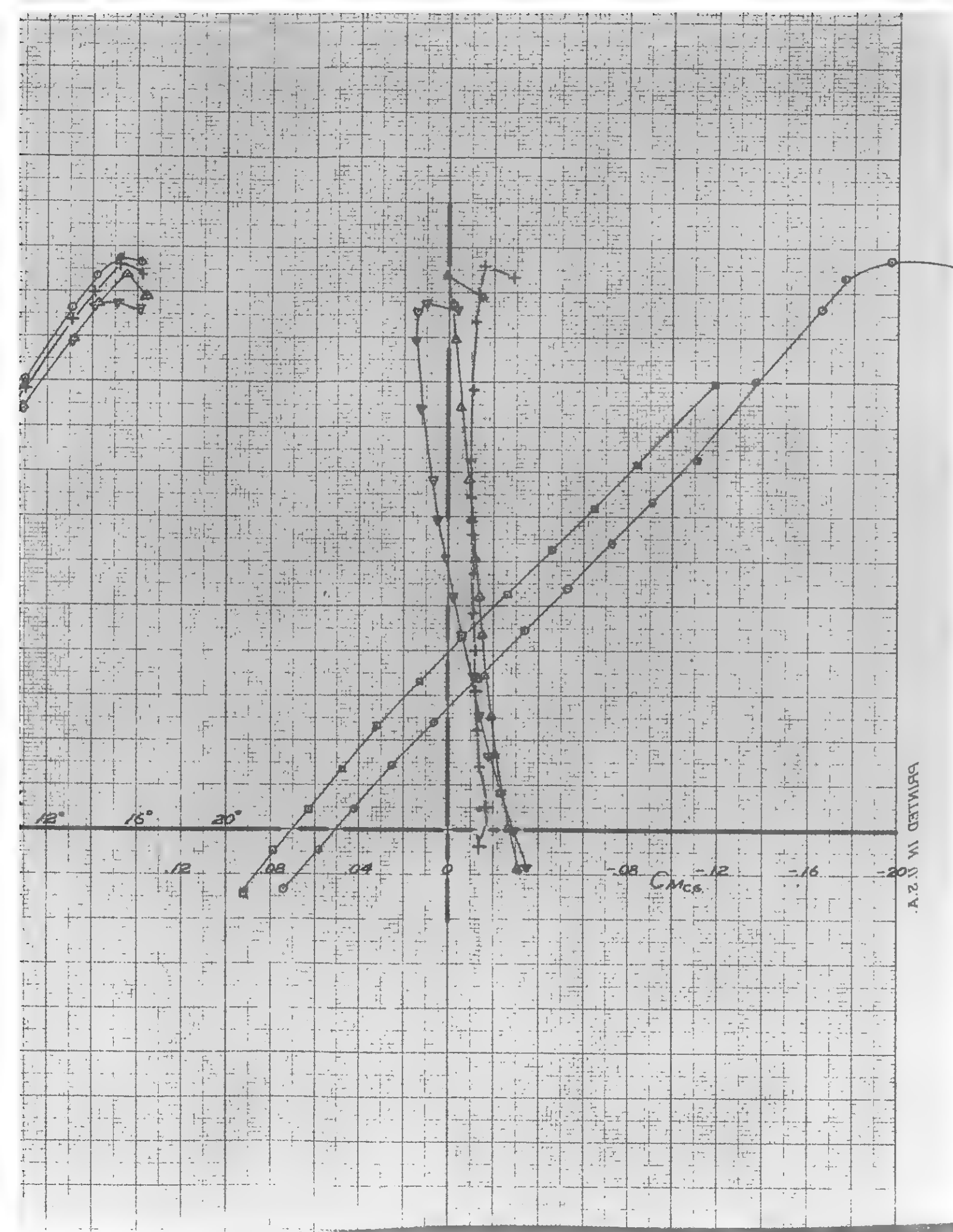
EFFECT OF  $H_2V$  WITH VARIOUS STABILIZER SETTINGS,  
AND EFFECT OF  $M$   
PARASITE DRAG



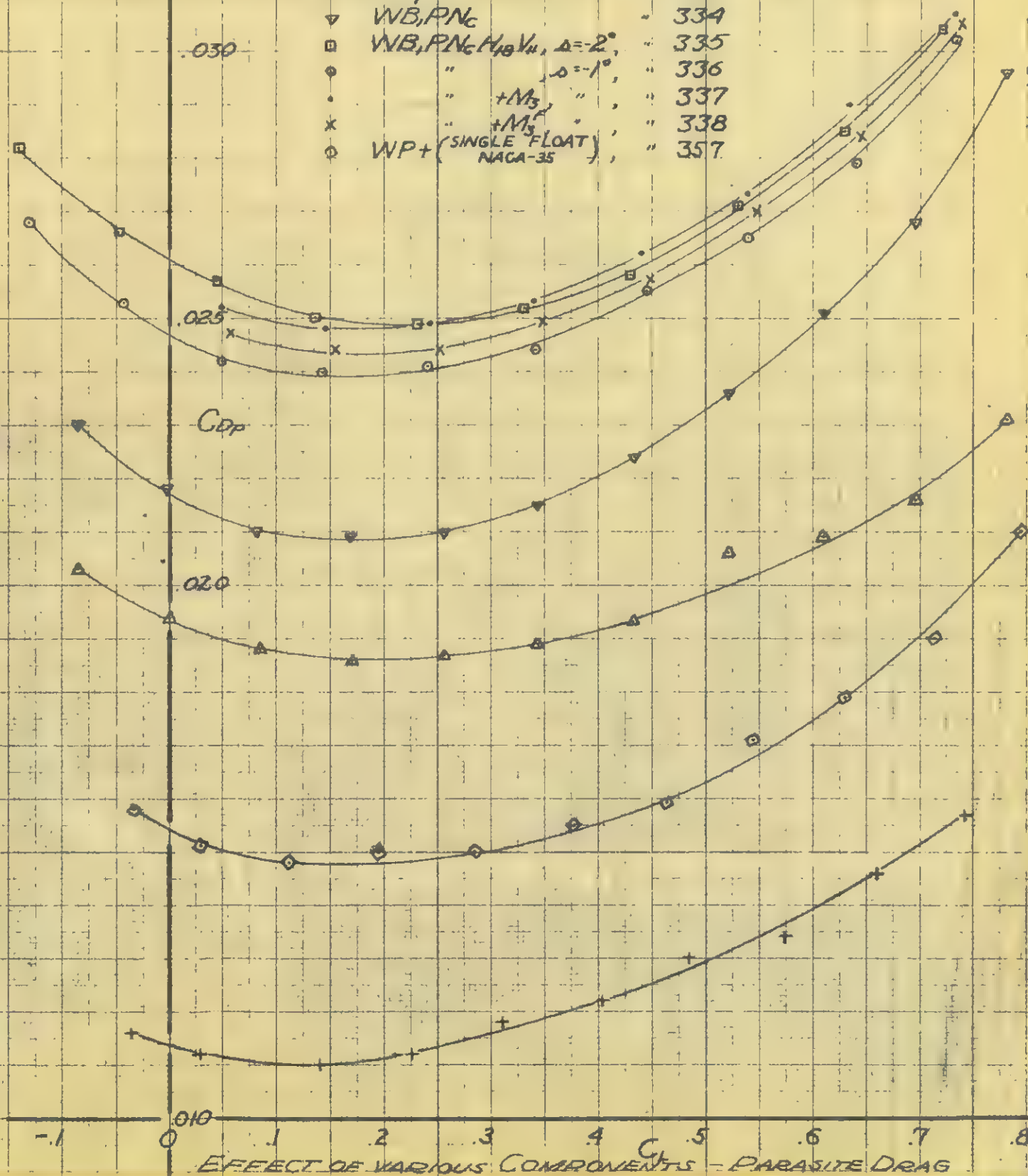


EFFECT OF HULL B<sub>1</sub>, NAGELLES AND H<sub>12</sub> V<sub>11</sub>  
WITH VARIOUS STABILIZER SETTINGS

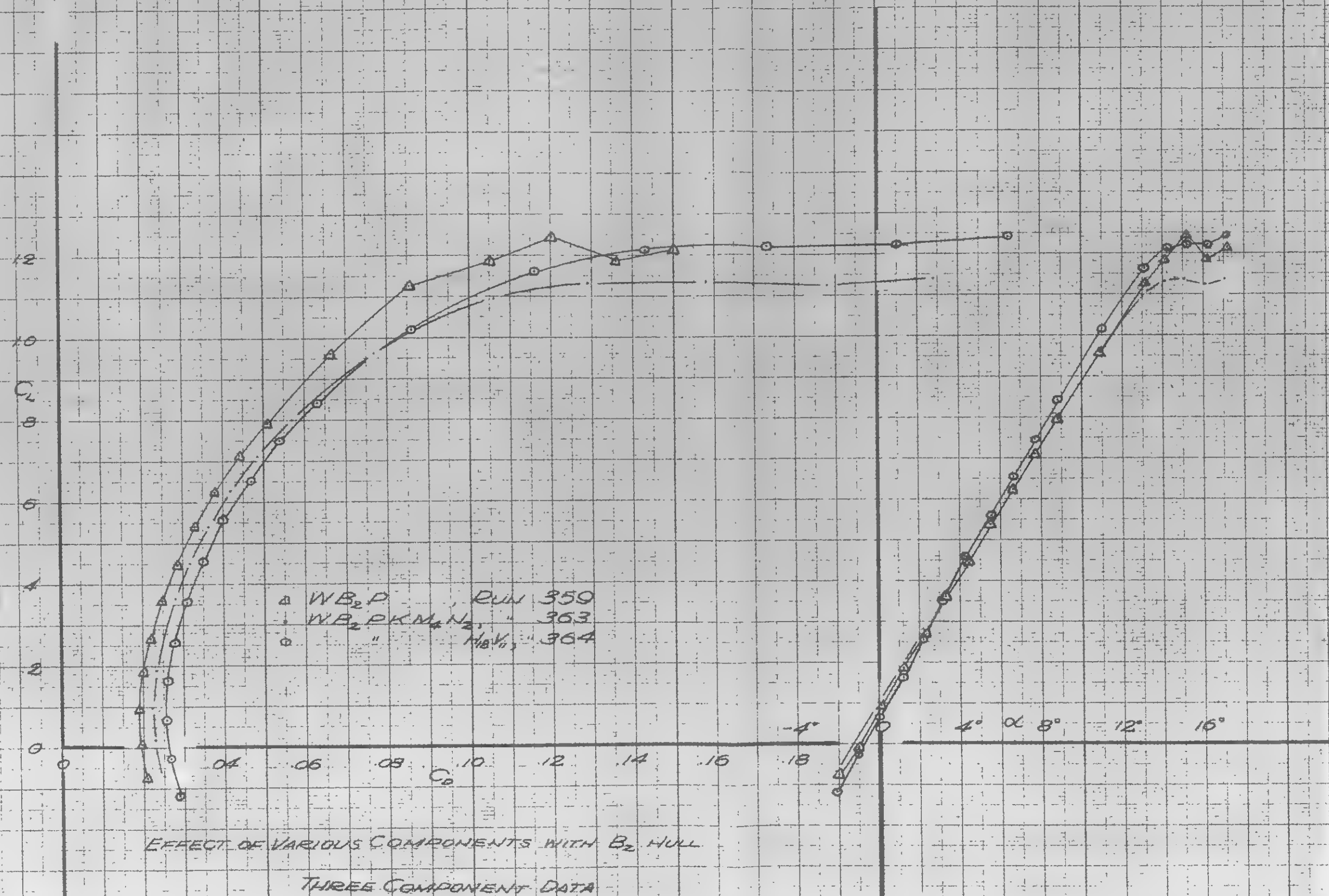
THREE COMPONENT DATA

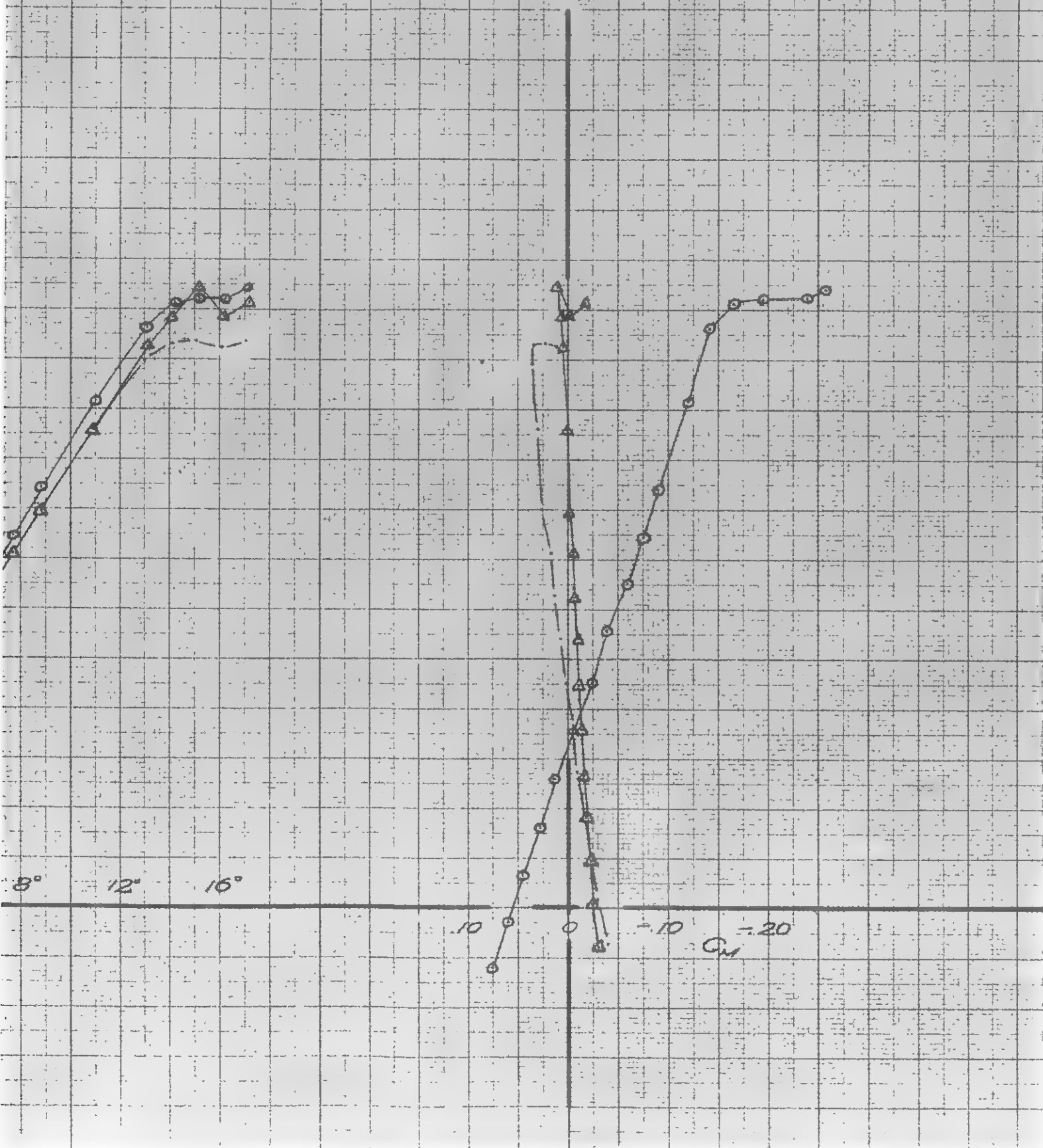


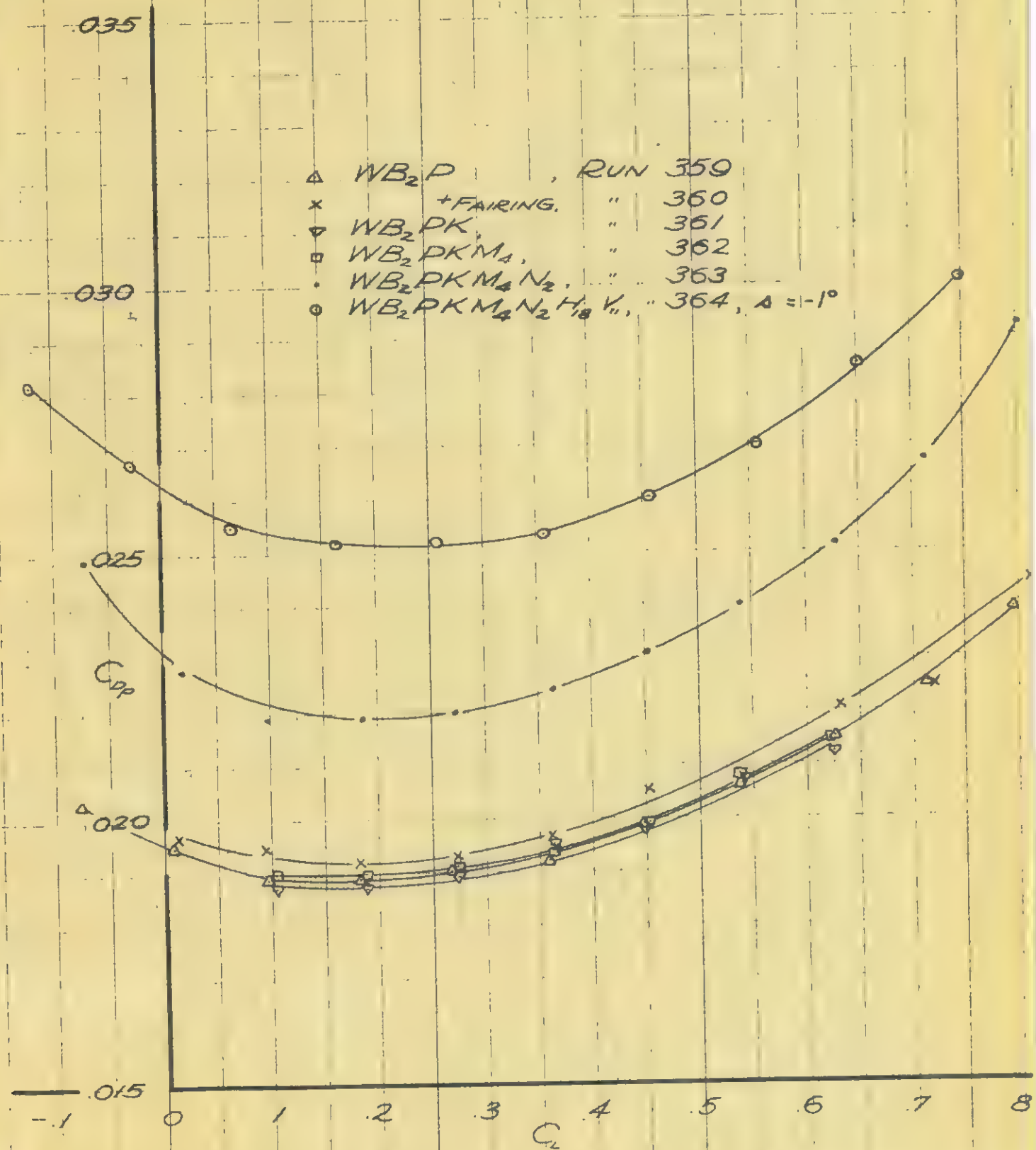
|   |  |         |
|---|--|---------|
| + | WP   | Run 358 |
| △ | WB, P  | 333     |
| ▽ | WB, P, N <sub>c</sub>  | 334     |
| □ | WB, P, N <sub>c</sub> , H <sub>10</sub> , V <sub>11</sub> , Δ=2° | 335     |
| ○ | " " Δ=1°   | 336     |
| · | " +M <sub>3</sub> "  | 337     |
| x | " +M <sub>3</sub> "  | 338     |
| ◇ | WP + (SINGLE FLOAT)<br>NACA-35                                   | 357     |





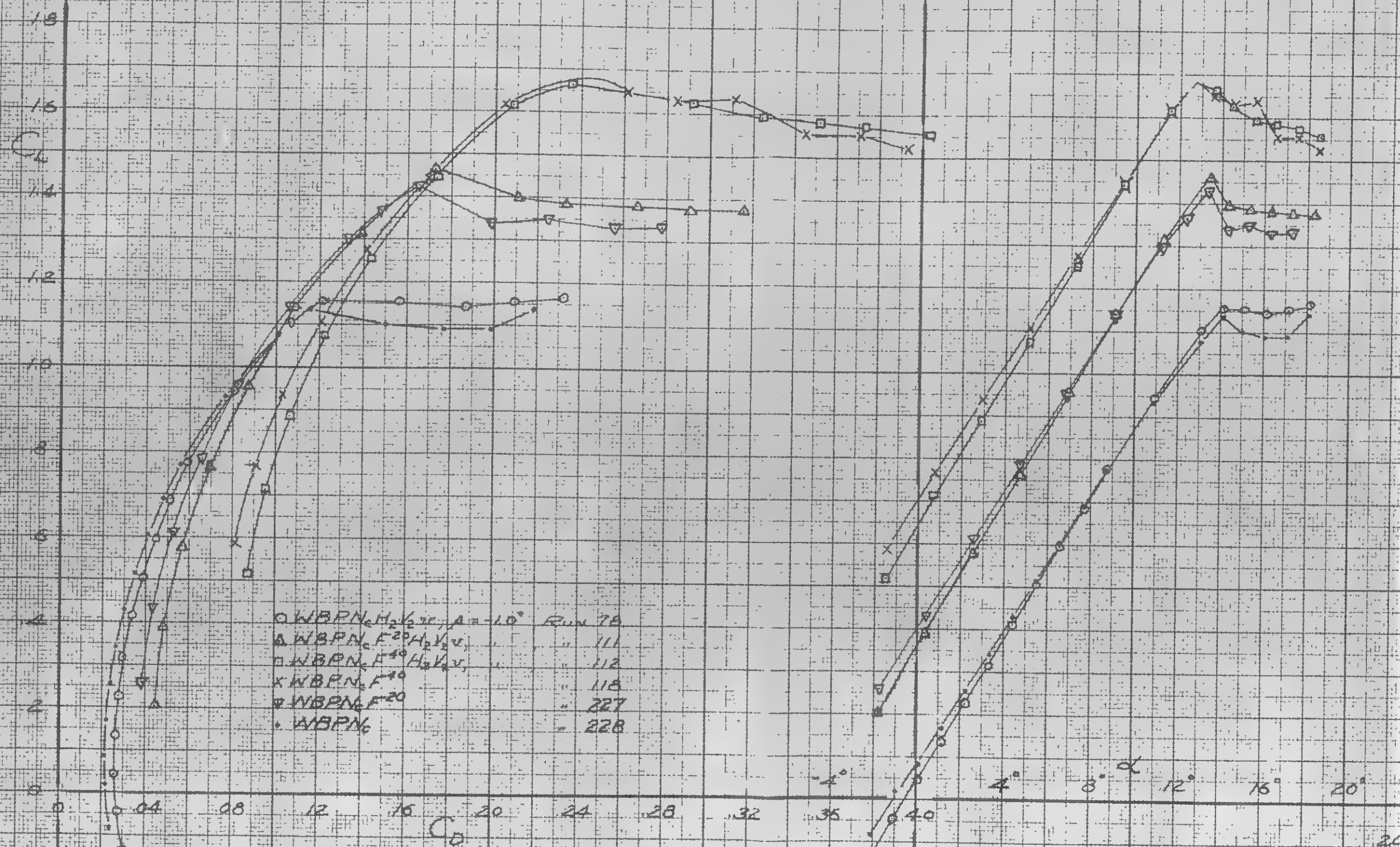




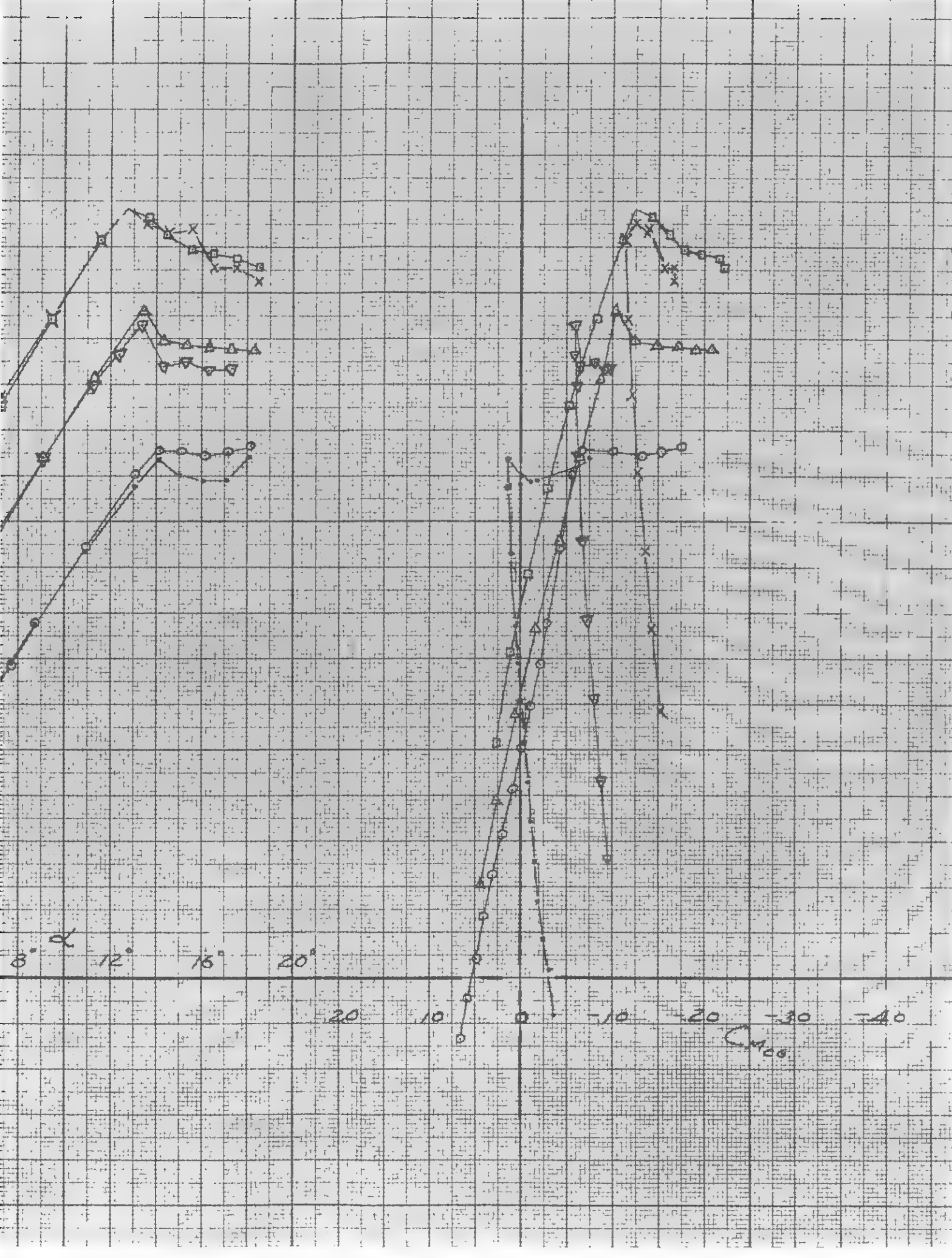


EFFECT OF VARIOUS COMPONENTS - PARASITE DRAG





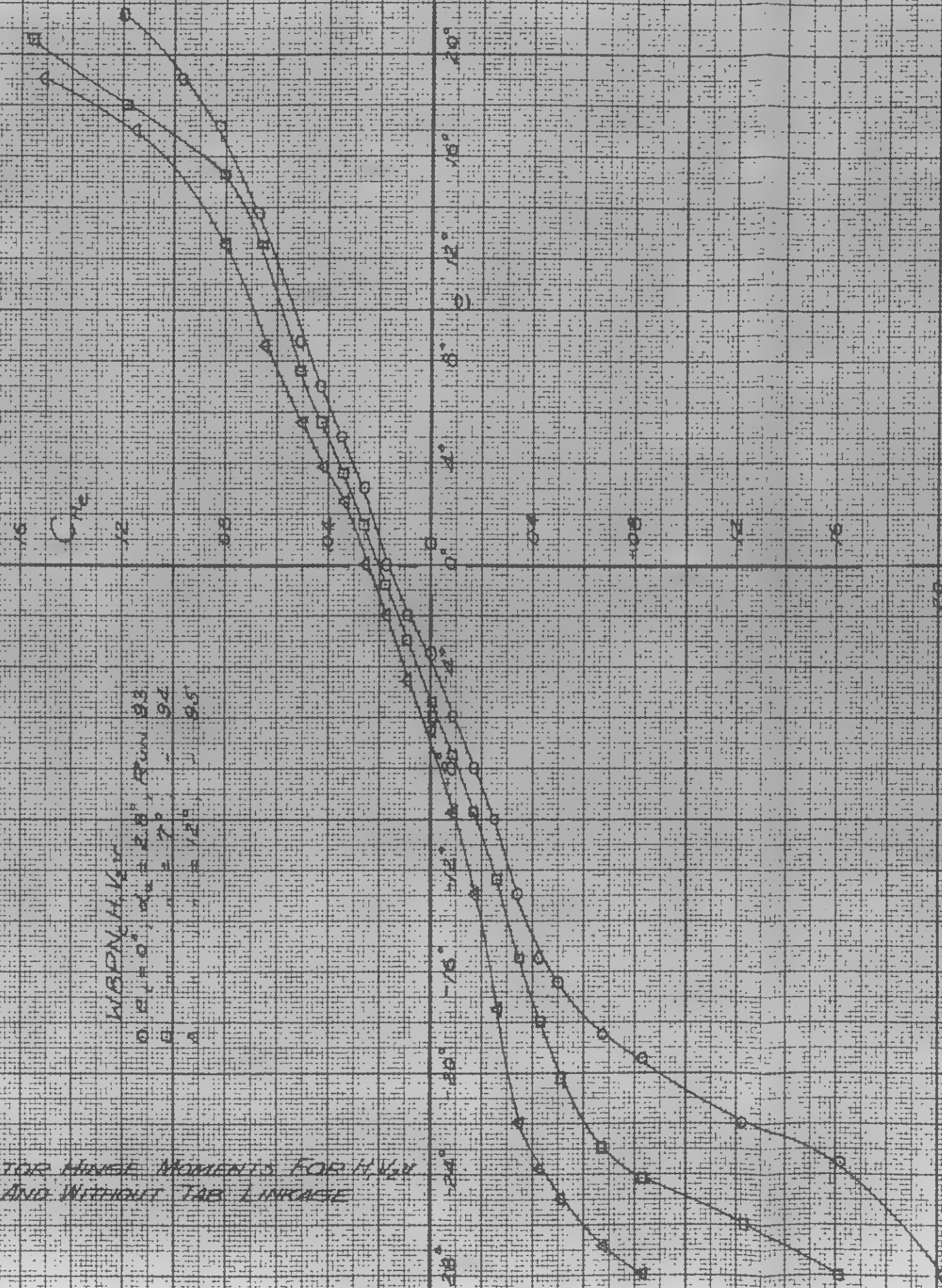
EFFECT OF FLAPS AT VARIOUS ANGLES  
WITH AND WITHOUT TAIL SURFACES  $H_2/V_2$   
THREE COMPONENT DATA



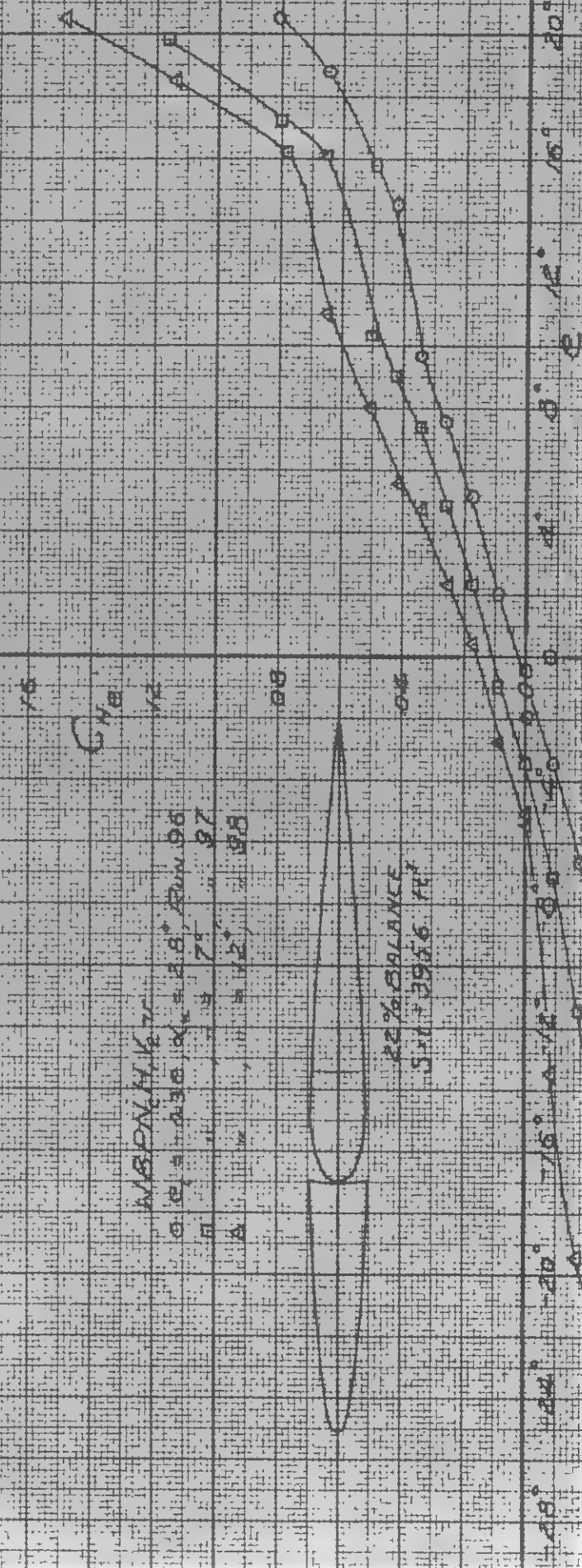


ELEVATOR HINGE MOMENTS FOR  $H/V_{20}$   
WITH AND WITHOUT TAB LINKAGE

WBDN,  $H/V_{20}$   
 $\alpha_1 = 0^\circ$ ,  $\alpha_2 = 2.8^\circ$ , Run 93  
 $\alpha_1 = 0^\circ$ ,  $\alpha_2 = 7^\circ$ , Run 94  
 $\alpha_1 = 0^\circ$ ,  $\alpha_2 = 12^\circ$ , Run 95



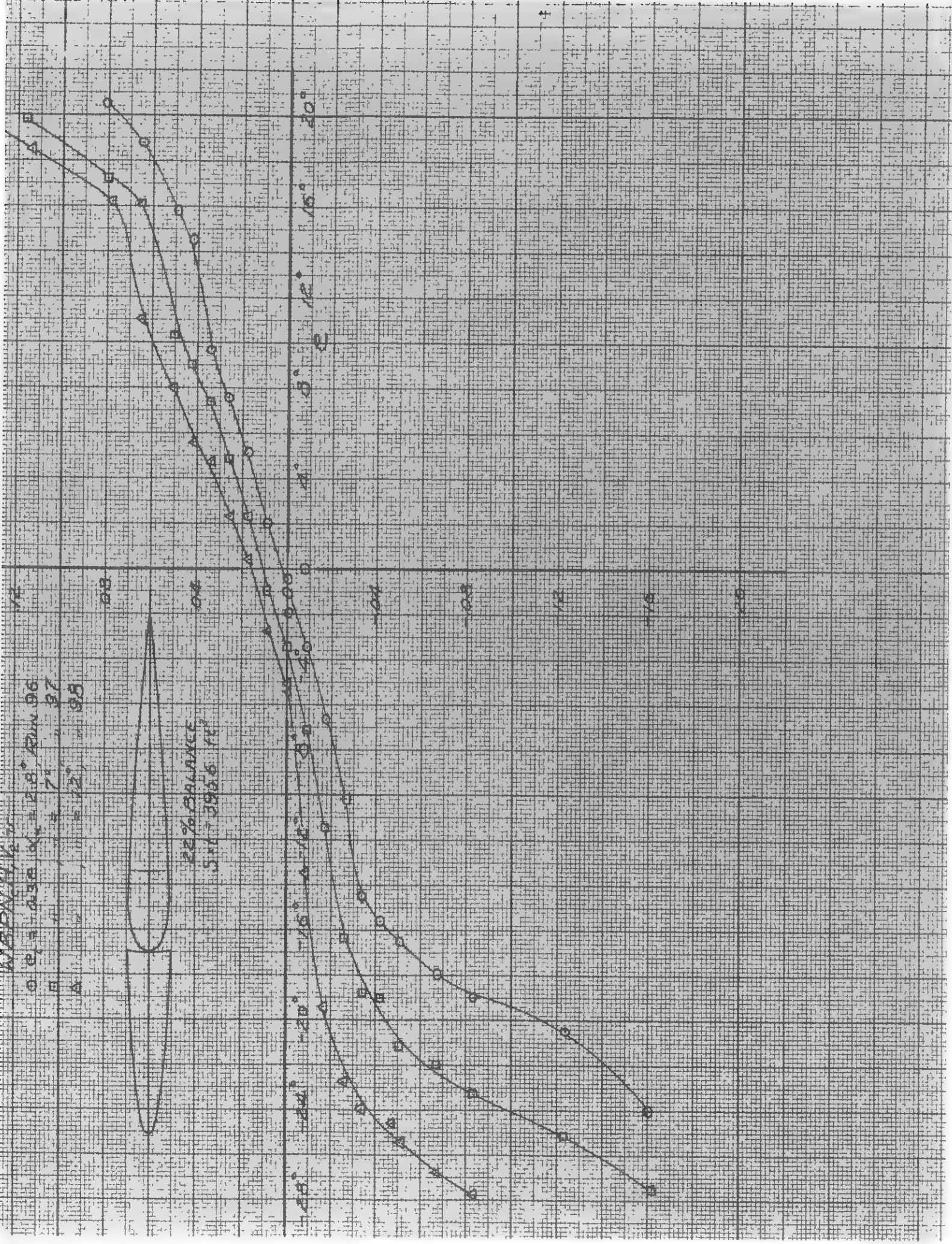
WBDN,  $H/V_{20}$   
 $\alpha_1 = 0^\circ$ ,  $\alpha_2 = 2.8^\circ$ , Run 96  
 $\alpha_1 = 0^\circ$ ,  $\alpha_2 = 7^\circ$ , Run 97  
 $\alpha_1 = 0^\circ$ ,  $\alpha_2 = 12^\circ$ , Run 98



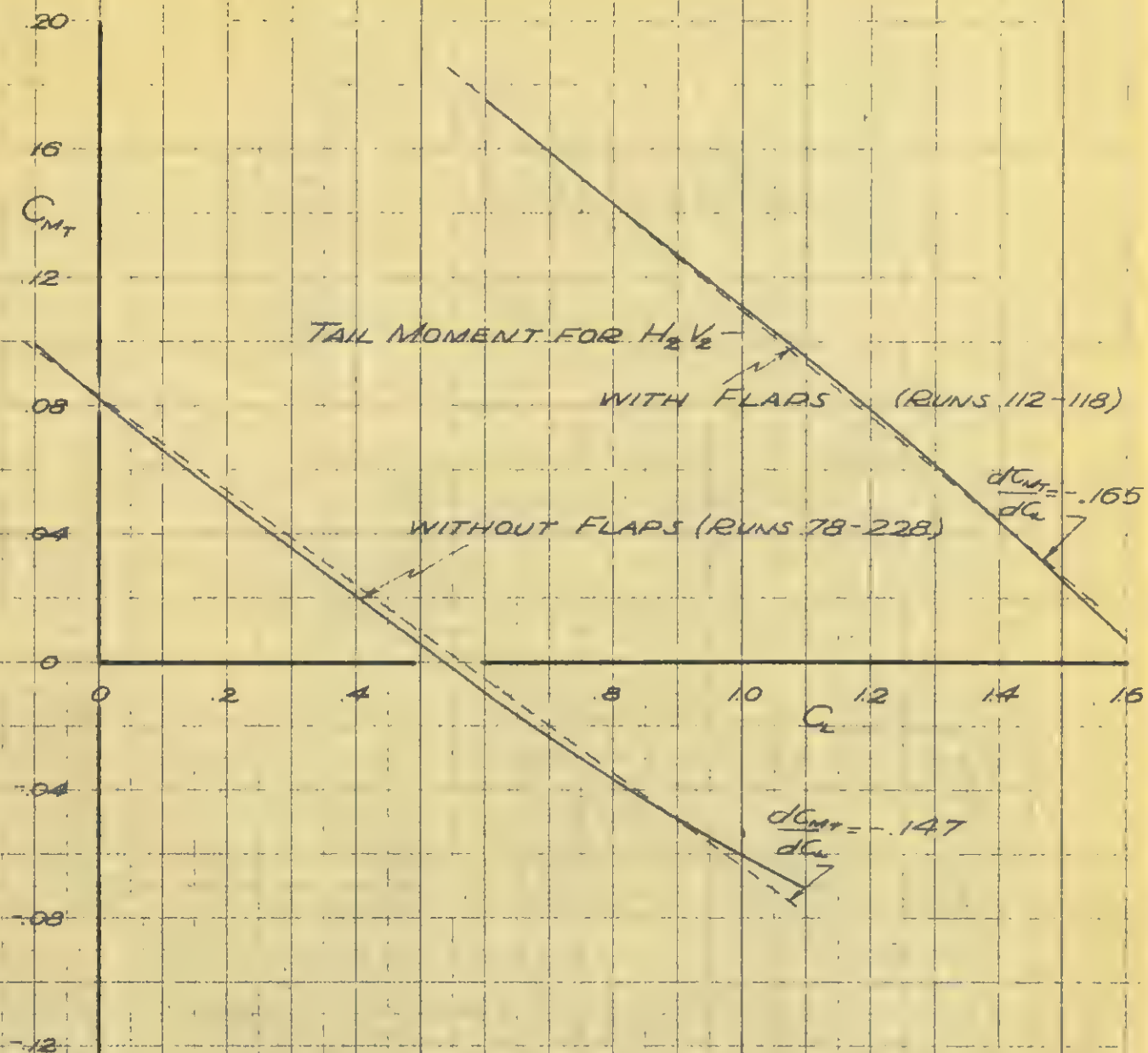
22% BALANCE  
3.17 3956 FT

MDPN, H, V,  $\gamma$   
 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9  
 1.0, 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 2.0

22% BALANCE  
 5.17 395.6 FT

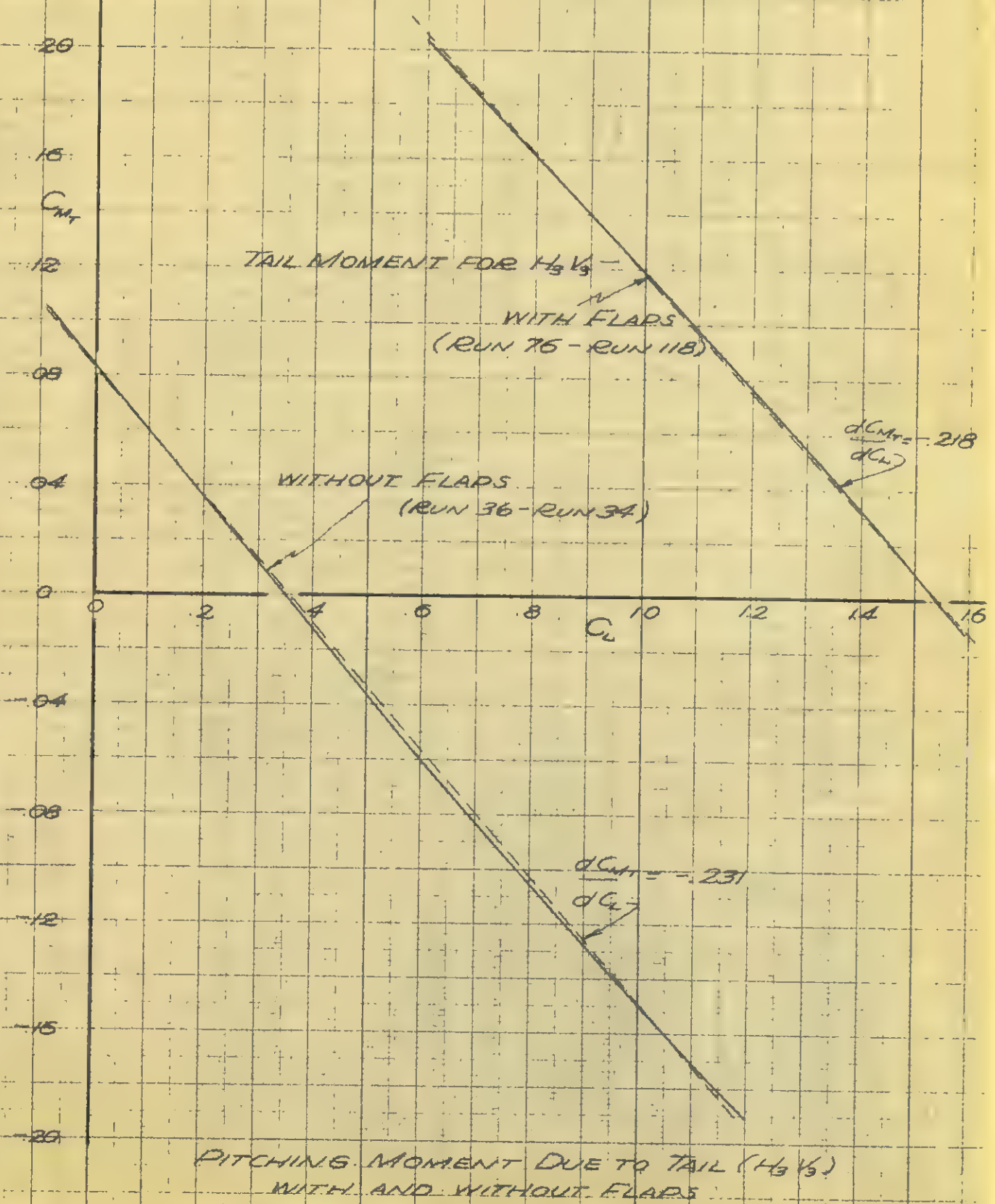






PITCHING MOMENT DUE TO TAIL ( $H_2 V_2$ )  
WITH AND WITHOUT FLAPS

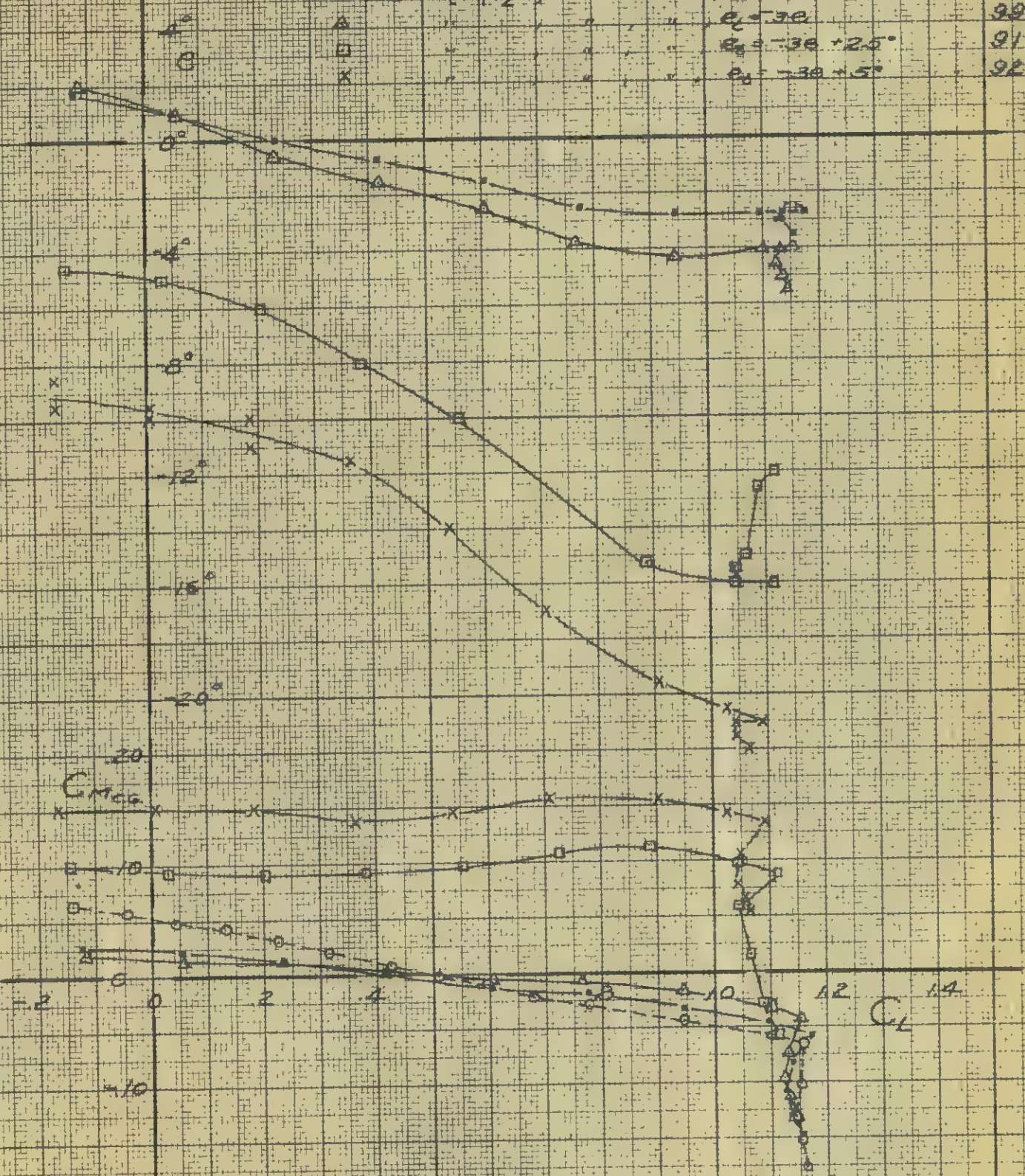






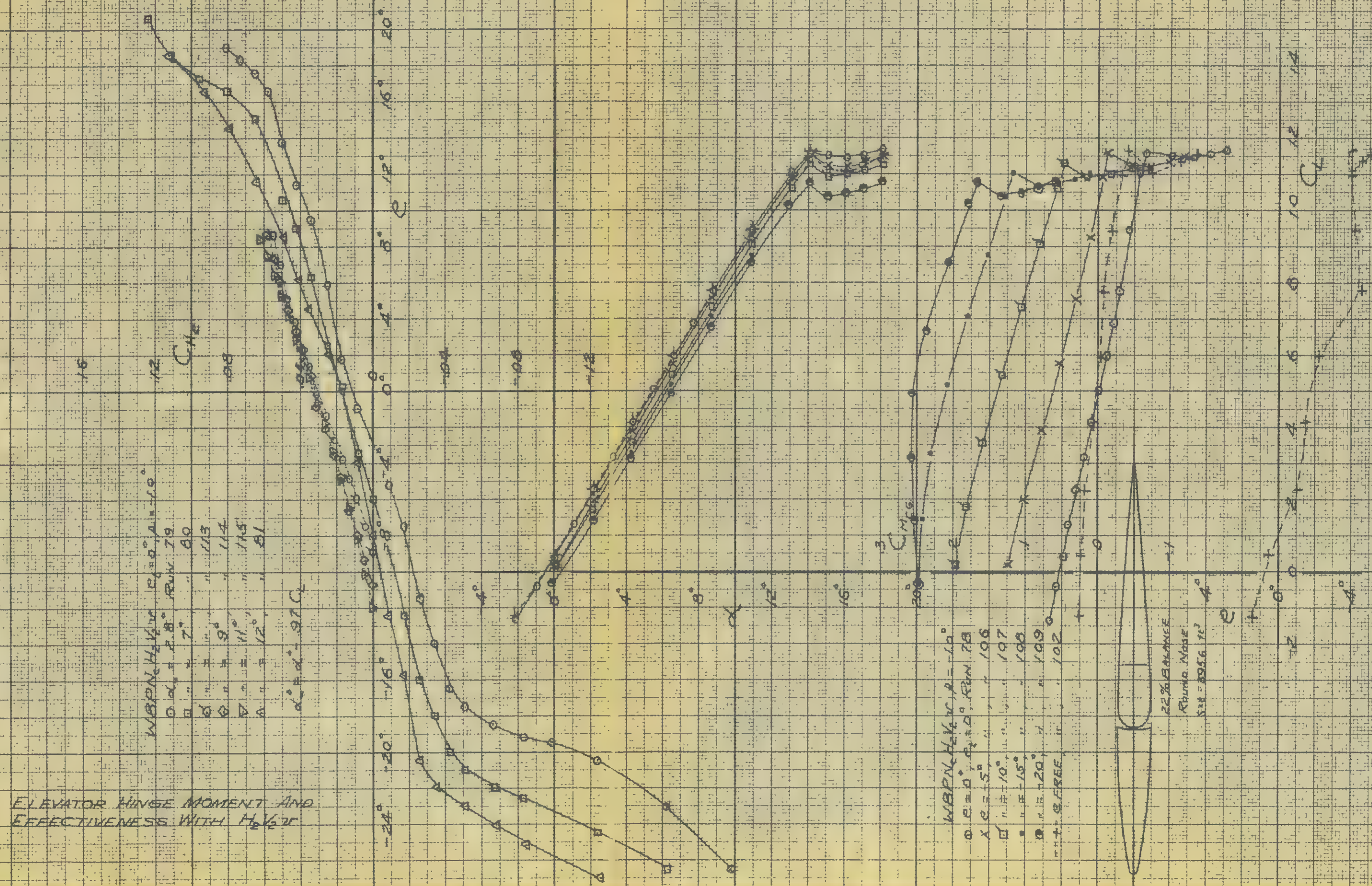
- 5 WBPAN<sub>2</sub>H<sub>2</sub>V<sub>2</sub>, A = -10°, B = 0°, C = 0°  
• WBPAN<sub>2</sub>H<sub>2</sub>V<sub>2</sub> " " FREE  
A " " " " e<sub>c</sub> = 3e  
D " " " " e<sub>d</sub> = -3e + 2.5°  
K " " " " e<sub>k</sub> = -3e + 1.5°

|     |    |
|-----|----|
| Run | 78 |
|     | 89 |
|     | 99 |
|     | 91 |
|     | 92 |



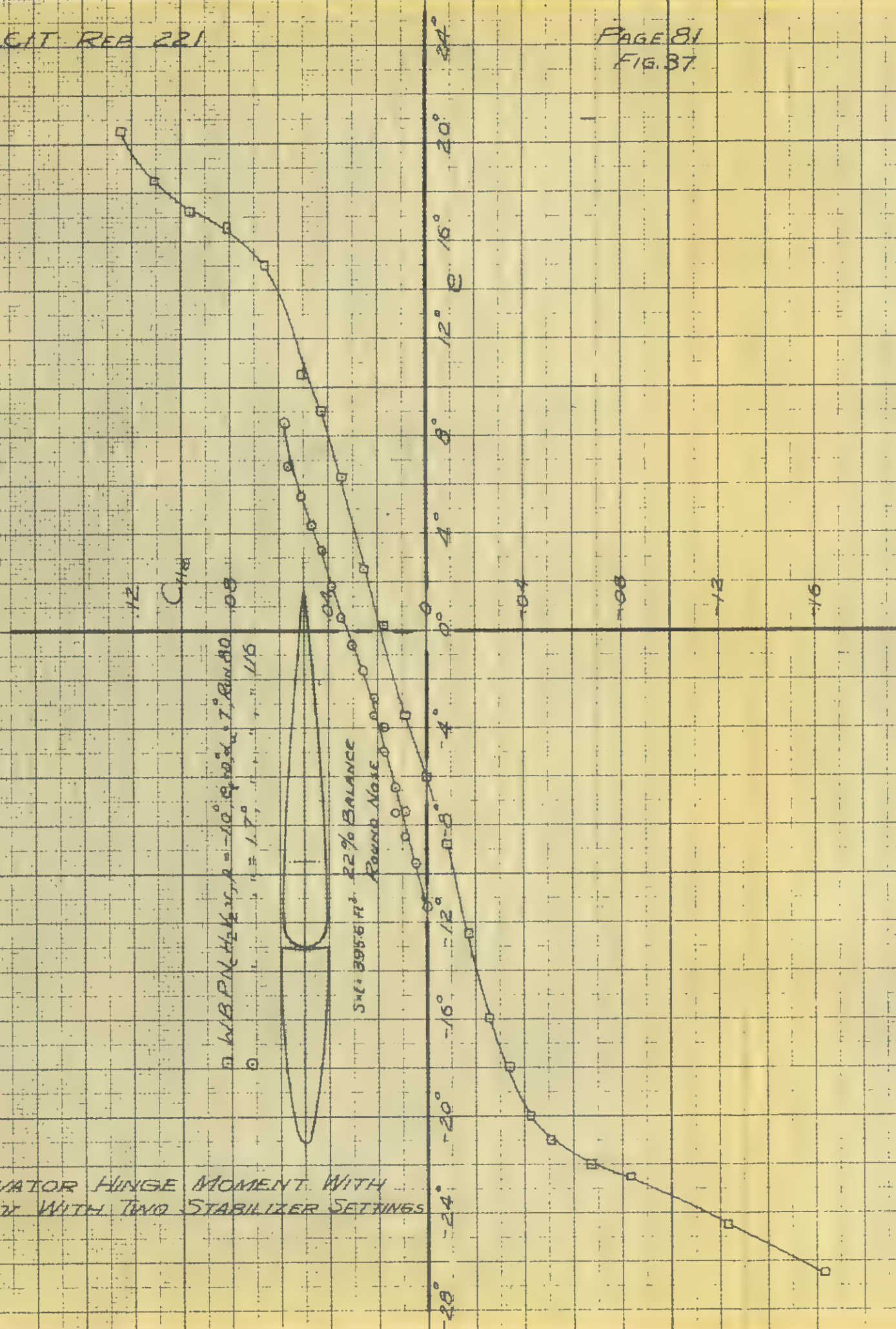
## ELEVATOR-FREE STABILITY WITH $H_1 V_2$ WITH VARIOUS TAB SETTINGS

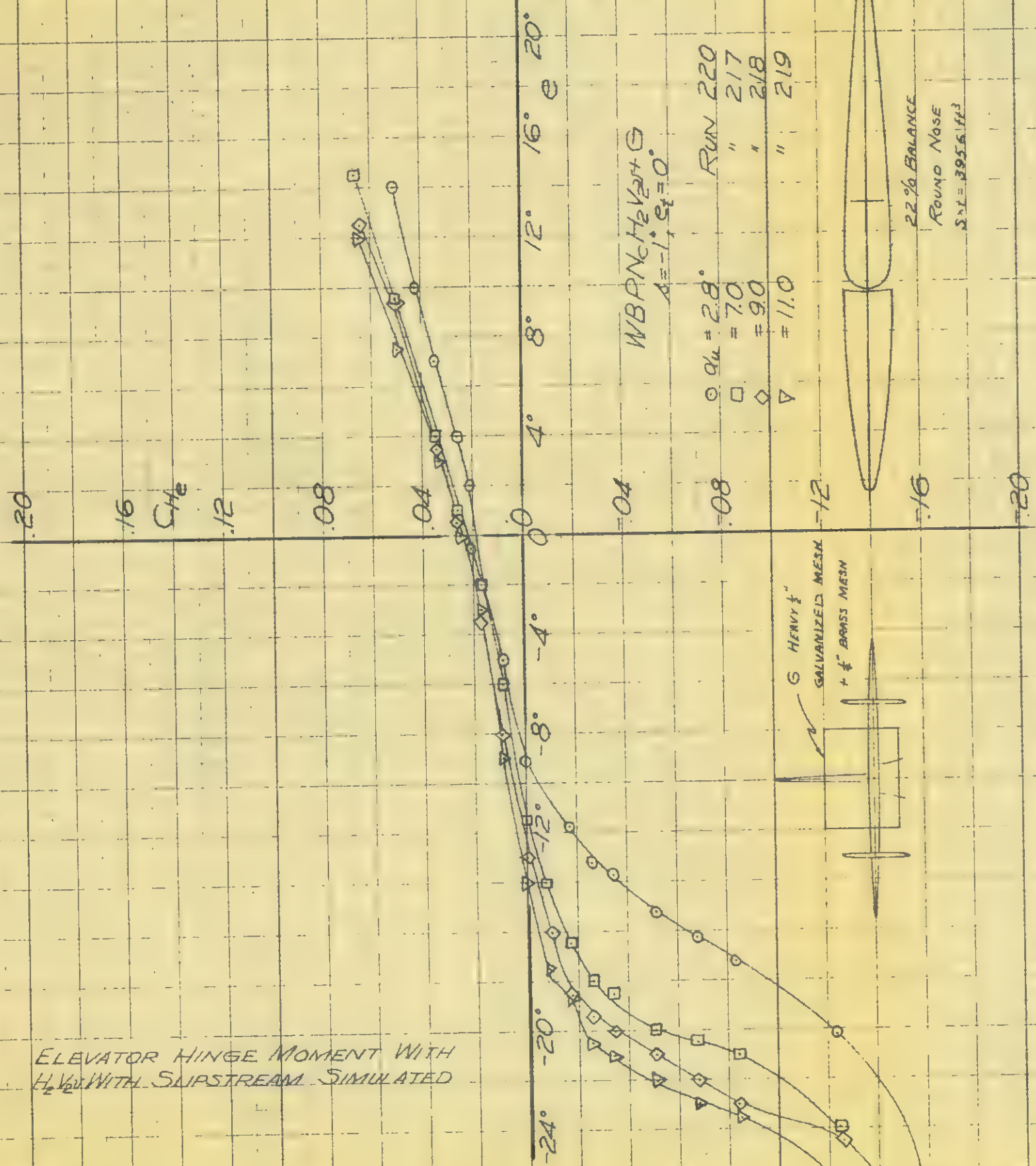






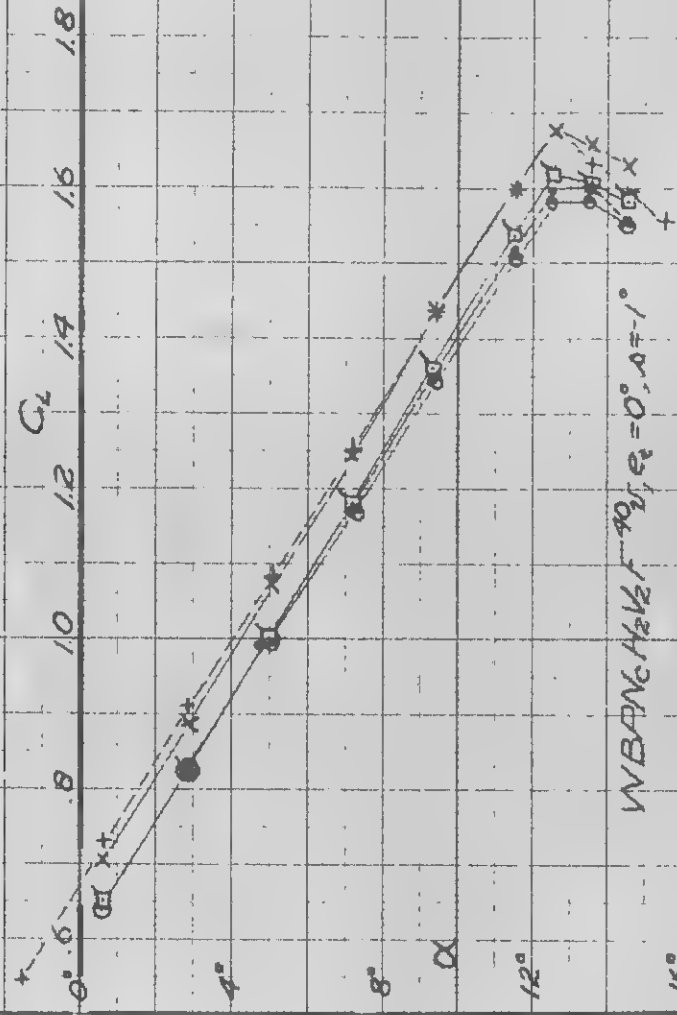
ELEVATOR HINGE MOMENT WITH  
H<sub>1/2</sub> WITH TWO STABILIZER SETTINGS





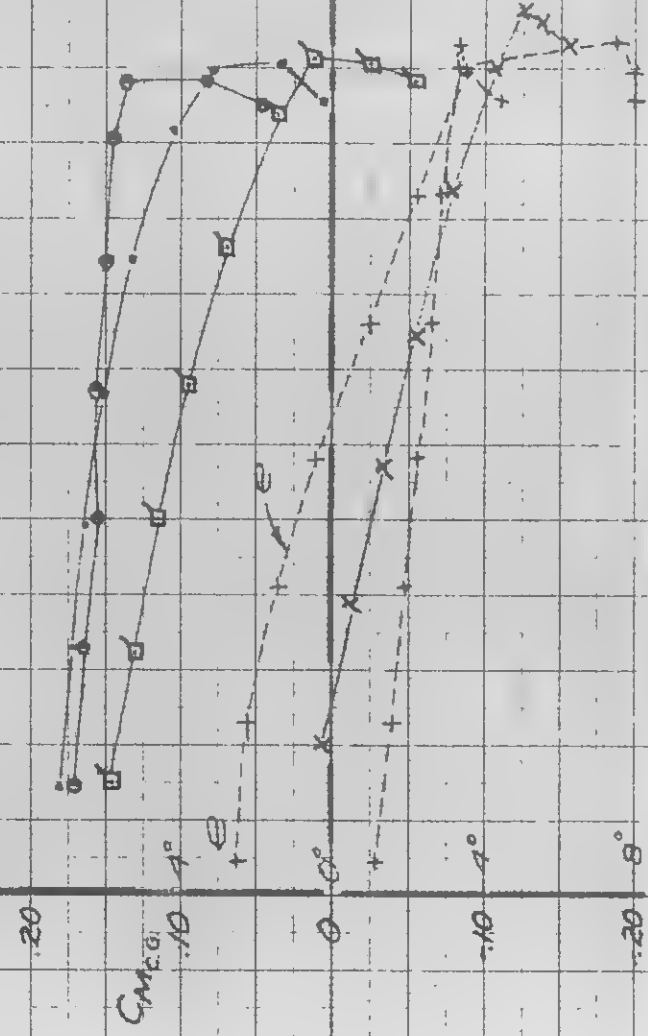
ELEVATOR HINGE MOMENT WITH  
H<sub>2</sub> WITH SLIPSTREAM SIMULATED



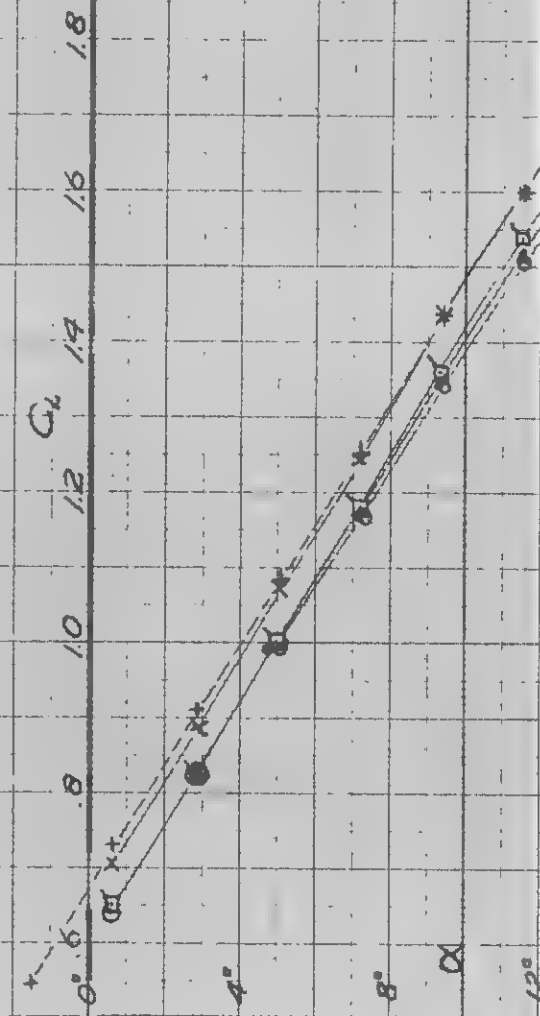
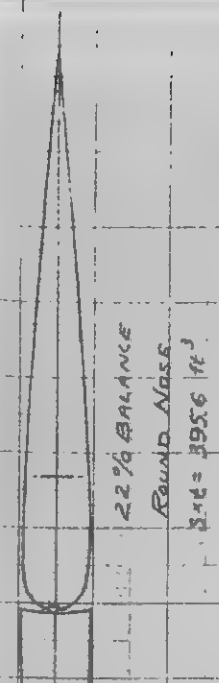
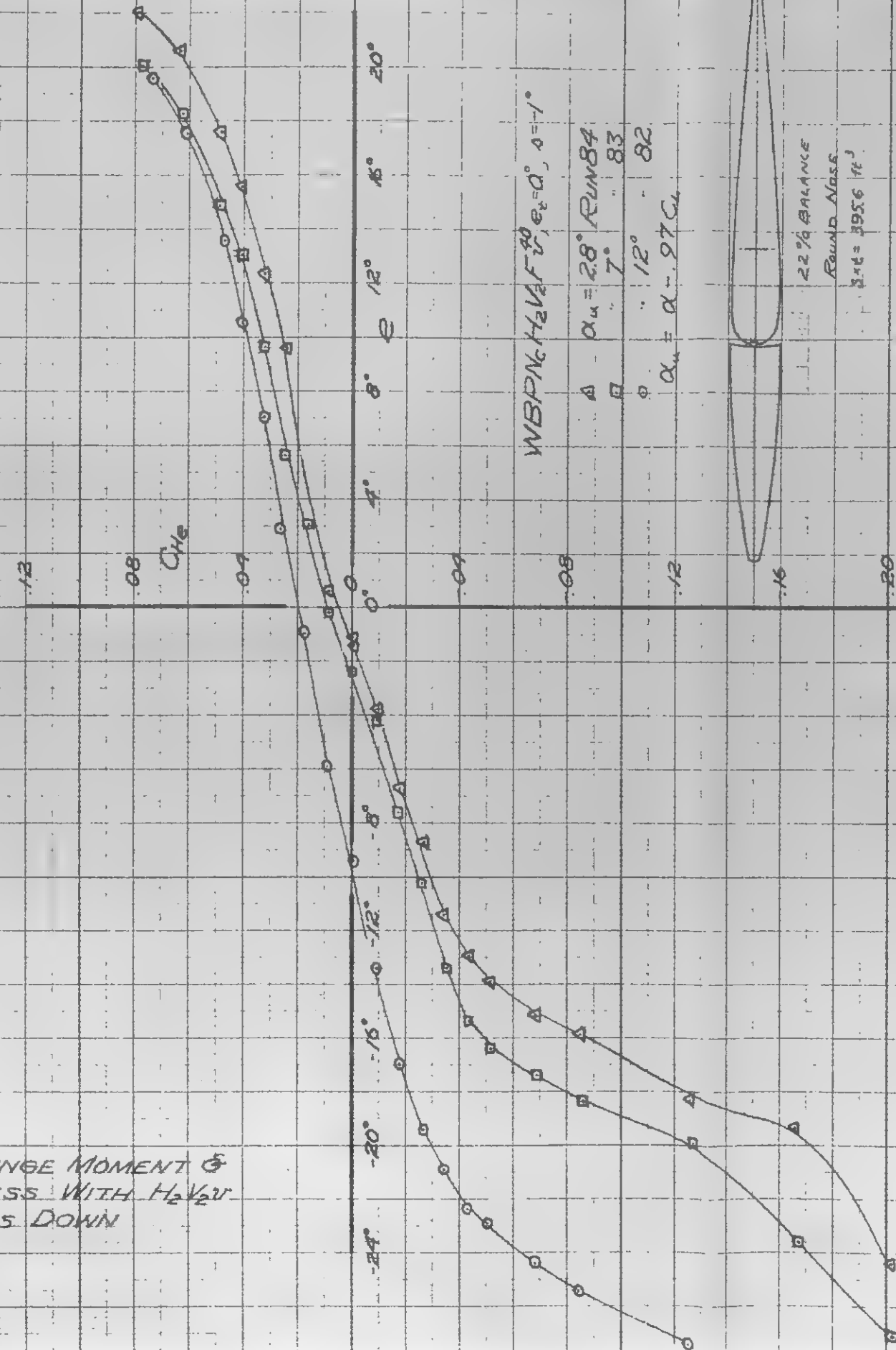


$\times$   $\alpha = 0^\circ$  RUN 221  
 $\square$  "  $10^\circ$  " 222  
 $\bullet$  "  $15^\circ$  " 223  
 $\circ$  "  $20^\circ$  " 224

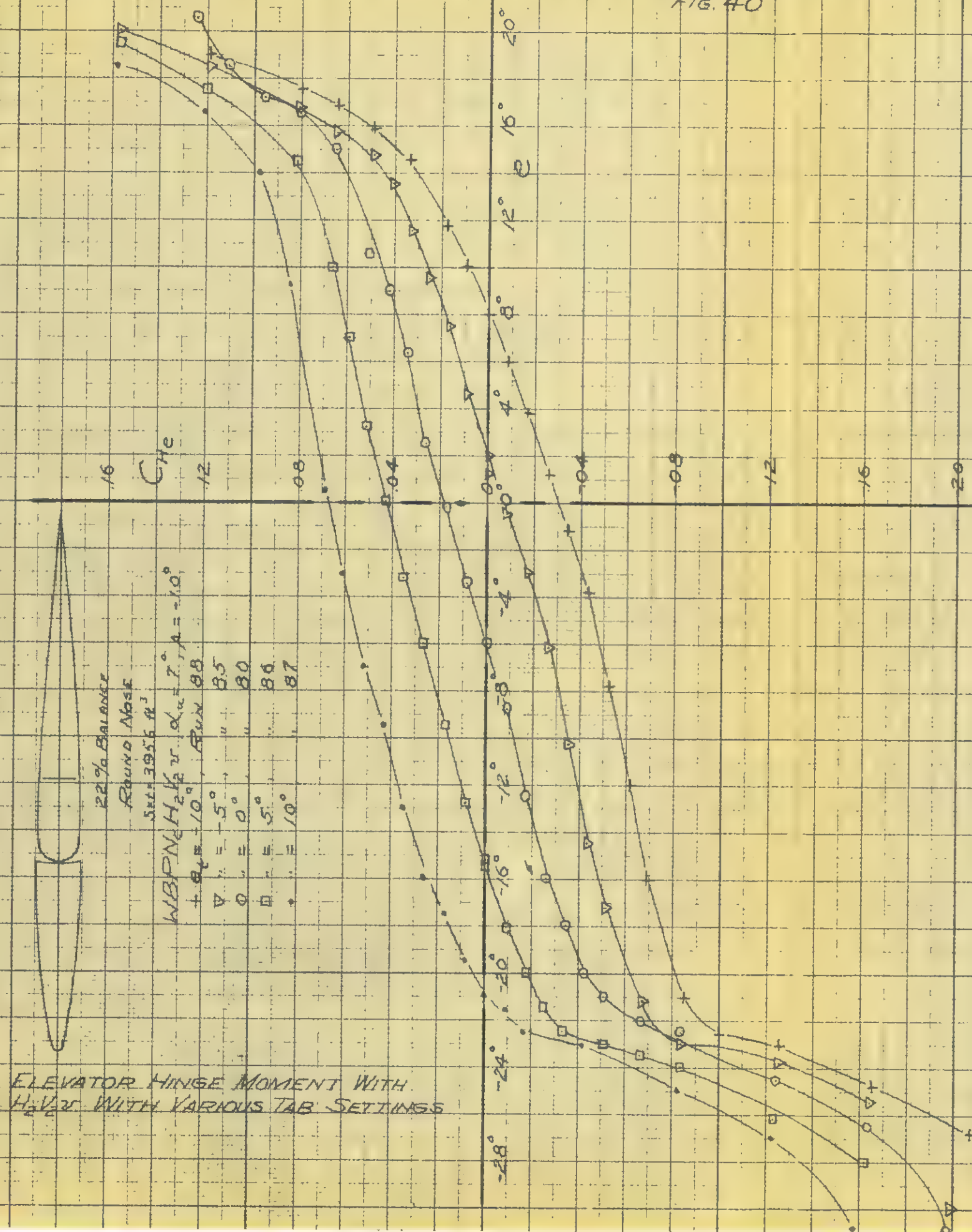
--  $\alpha$  FREE " 103



ELEVATOR HINGE MOMENT &  
EFFECTIVENESS WITH  $H_2V_{2V}$   
FLAPS DOWN



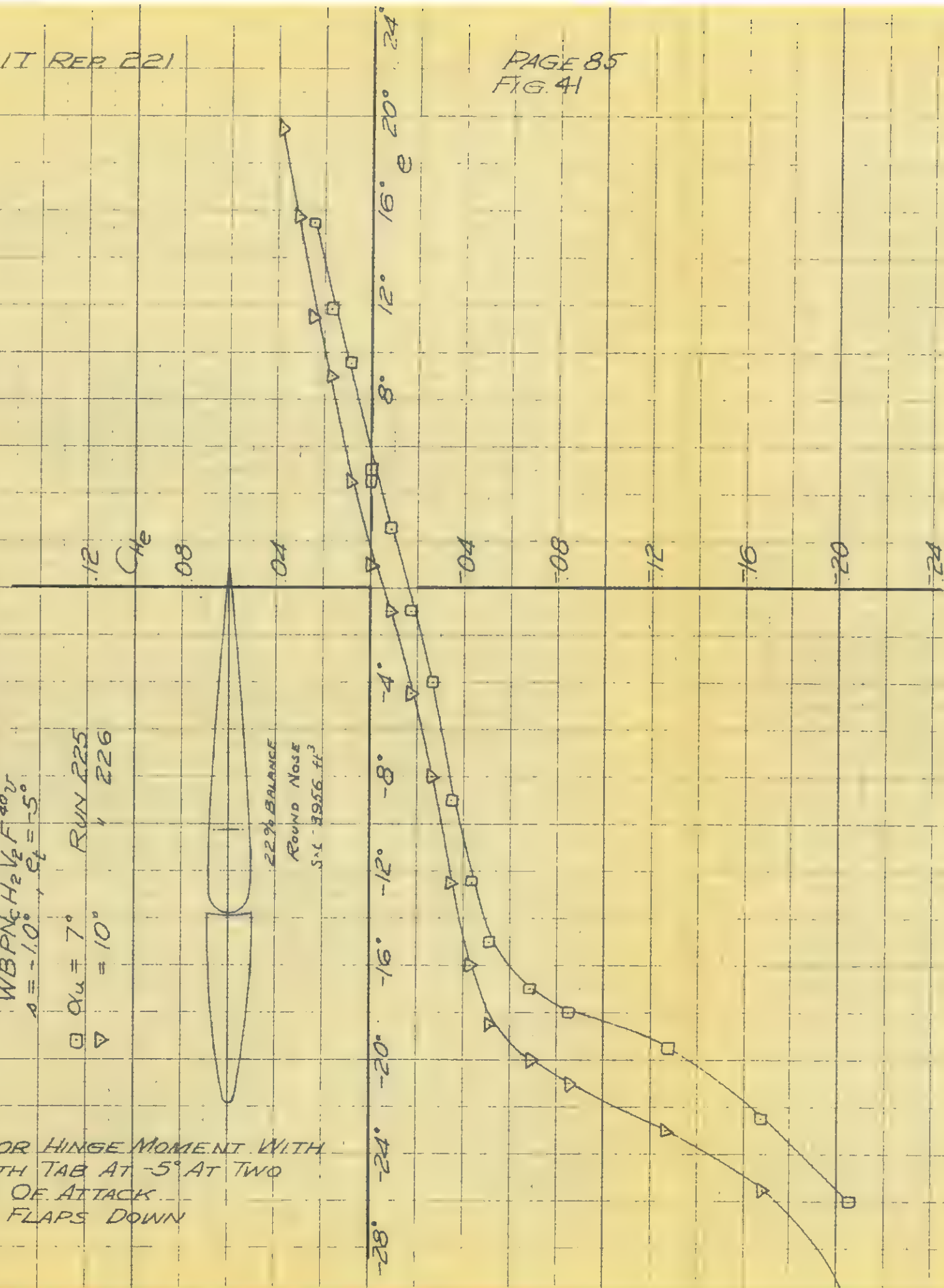
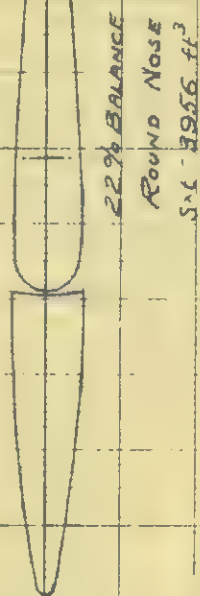




ELEVATOR HINGE MOMENT WITH  
 $H_2V_2$  WITH TAB AT  $-5^\circ$  AT TWO  
ANGLES OF ATTACK  
FLAPS DOWN

WBPN  $H_2V_2$  F 402  
 $\alpha = -1.0^\circ$ ,  $\beta = -5^\circ$

$\square \alpha_u = 7^\circ$  RUN 225  
 $\nabla = 10^\circ$  226

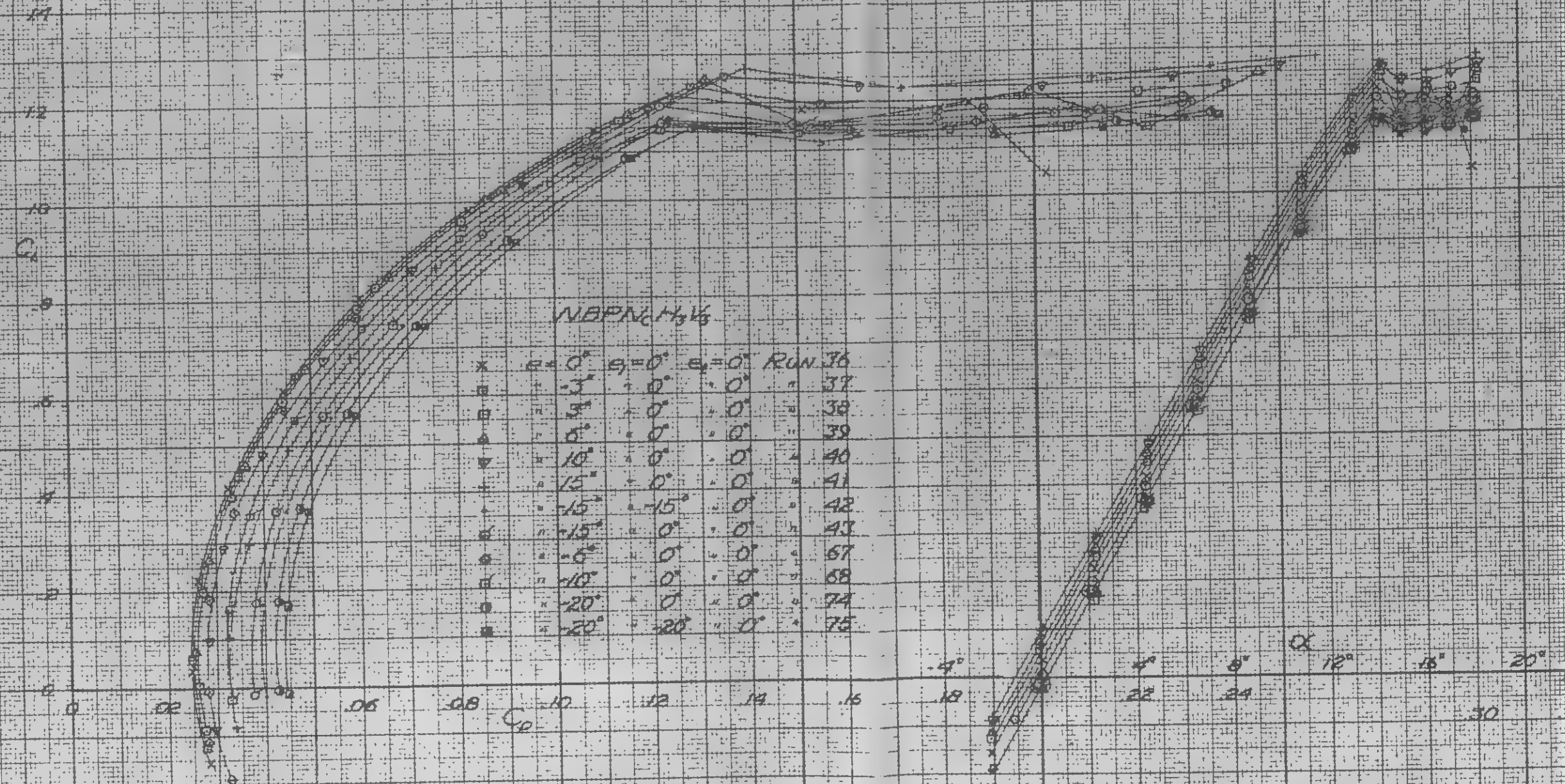




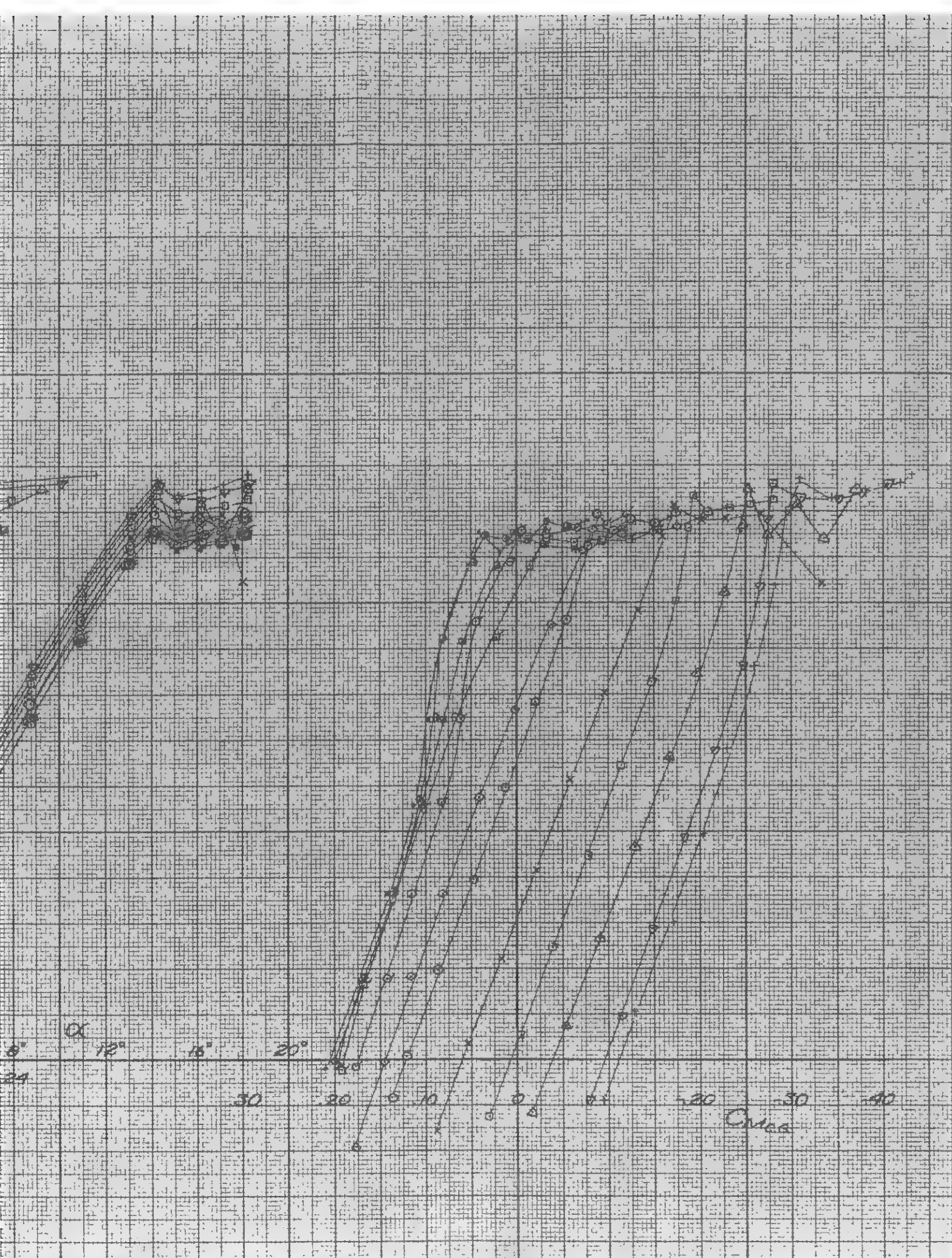








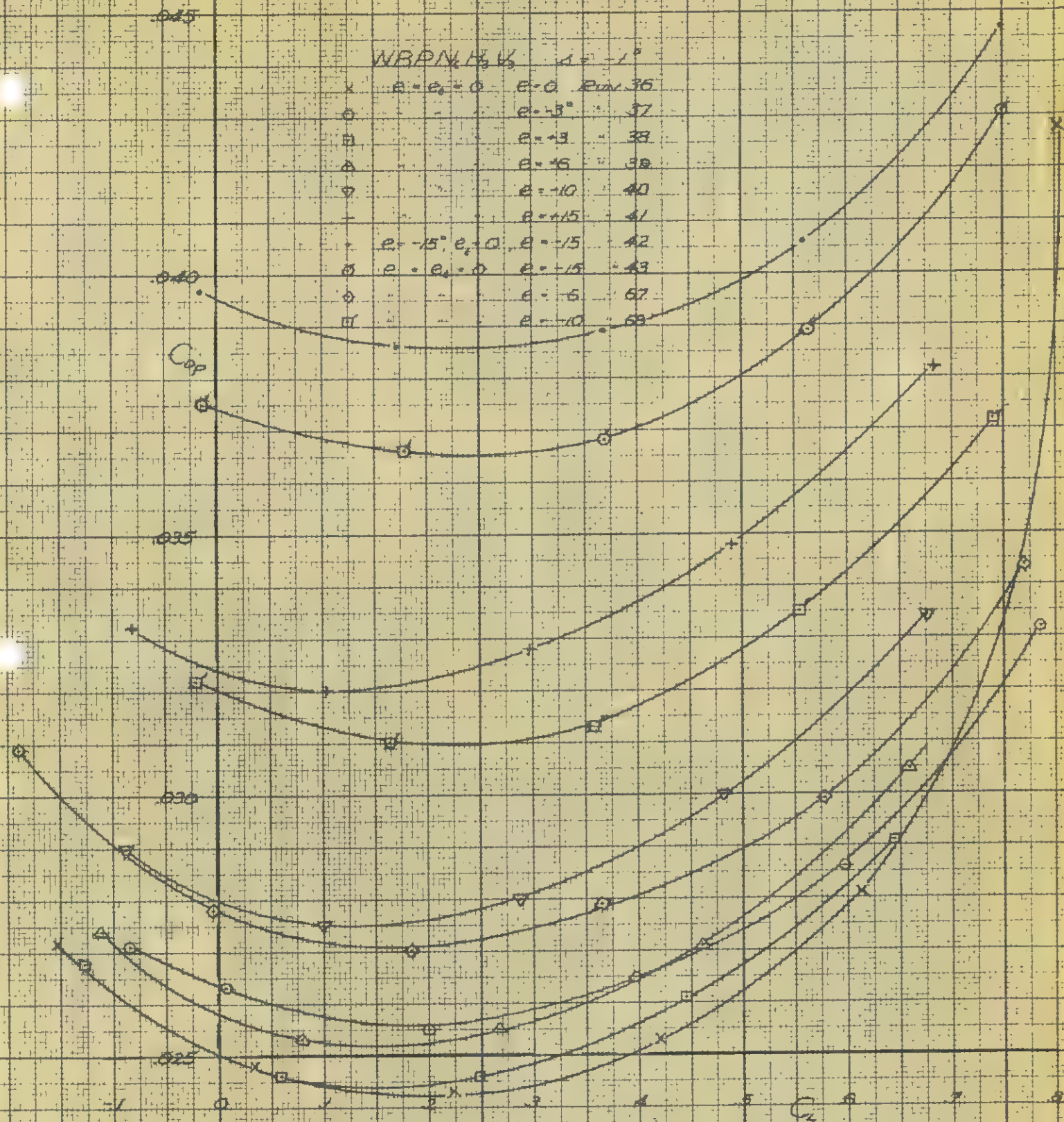
EFFECT OF ELEVATOR DEFLECTIONS WITH 16%  
THREE COMPONENT DATA





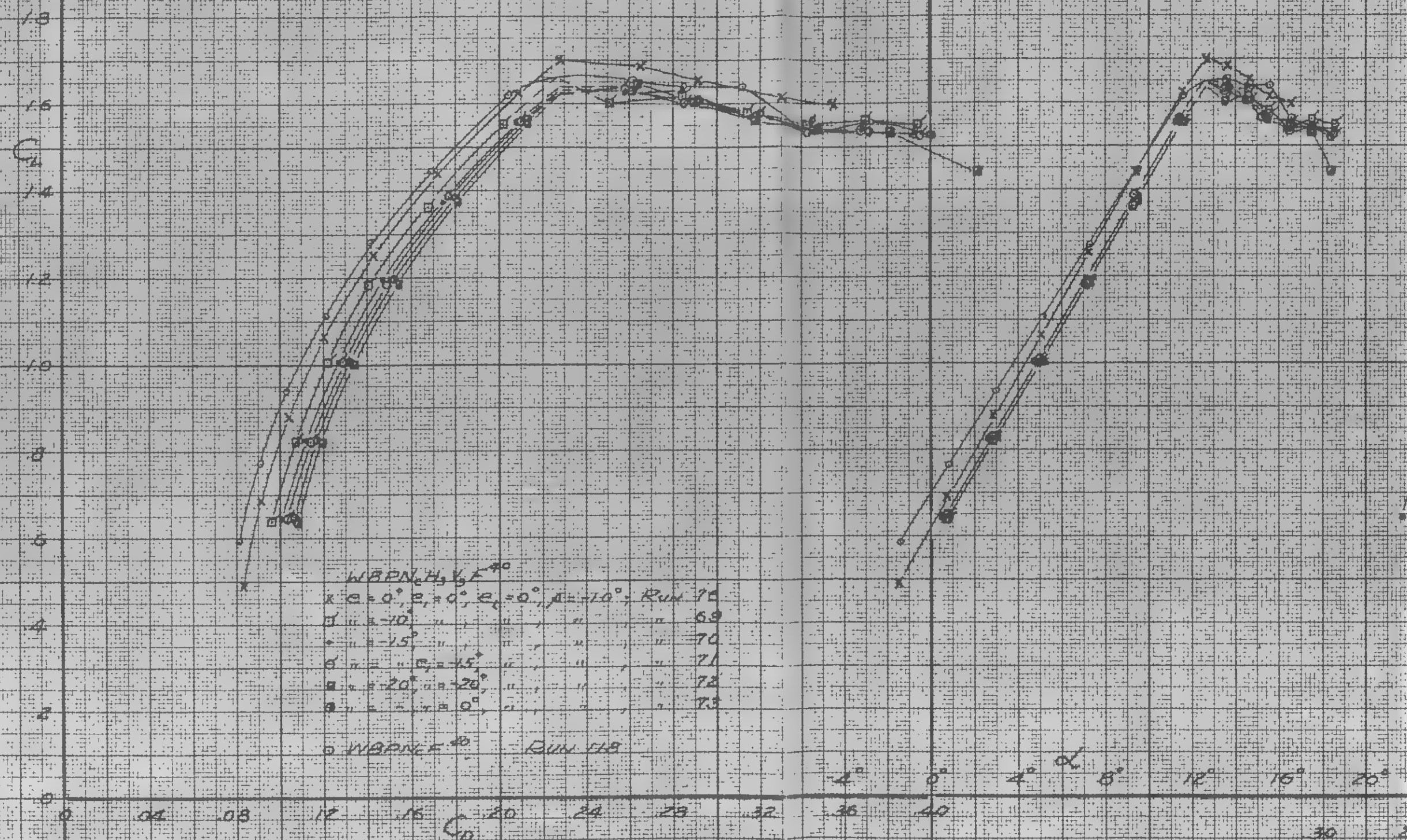
WBPV  $H_3 V_3$   $\alpha = -1^\circ$

|   |                 |                |        |
|---|-----------------|----------------|--------|
| x | $e = e_0 = 0$   | $e = 0$        | Row 36 |
| o | -               | $e = -3^\circ$ | 37     |
| □ | -               | $e = +3$       | 38     |
| △ | -               | $e = +6$       | 39     |
| ▽ | -               | $e = +10$      | 40     |
| + | -               | $e = +15$      | 41     |
| - | $e = -15^\circ$ | $e = -15$      | 42     |
| o | $e = e_0 = 0$   | $e = -15$      | 43     |
| o | -               | $e = -6$       | 57     |
| □ | -               | $e = -10$      | 58     |

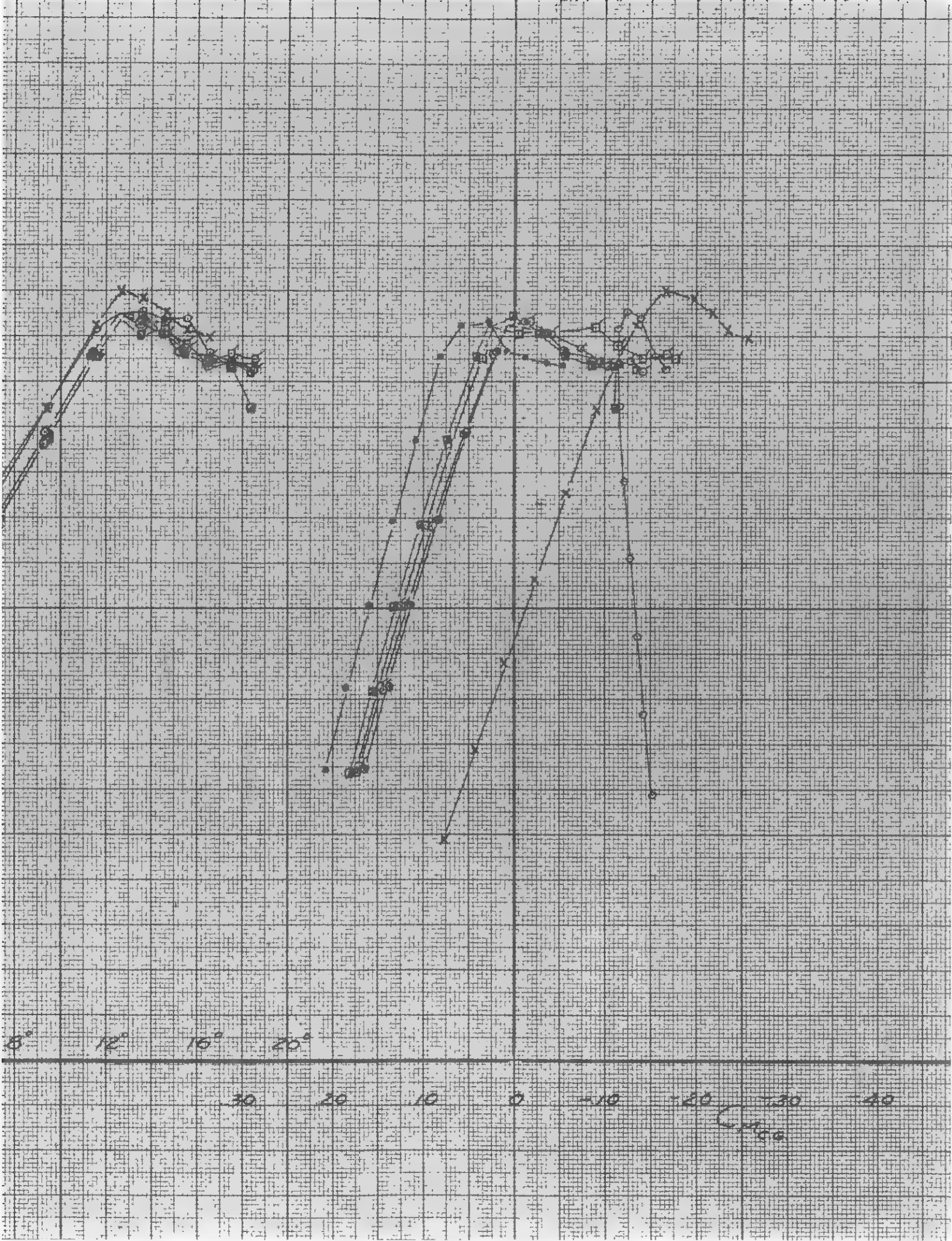


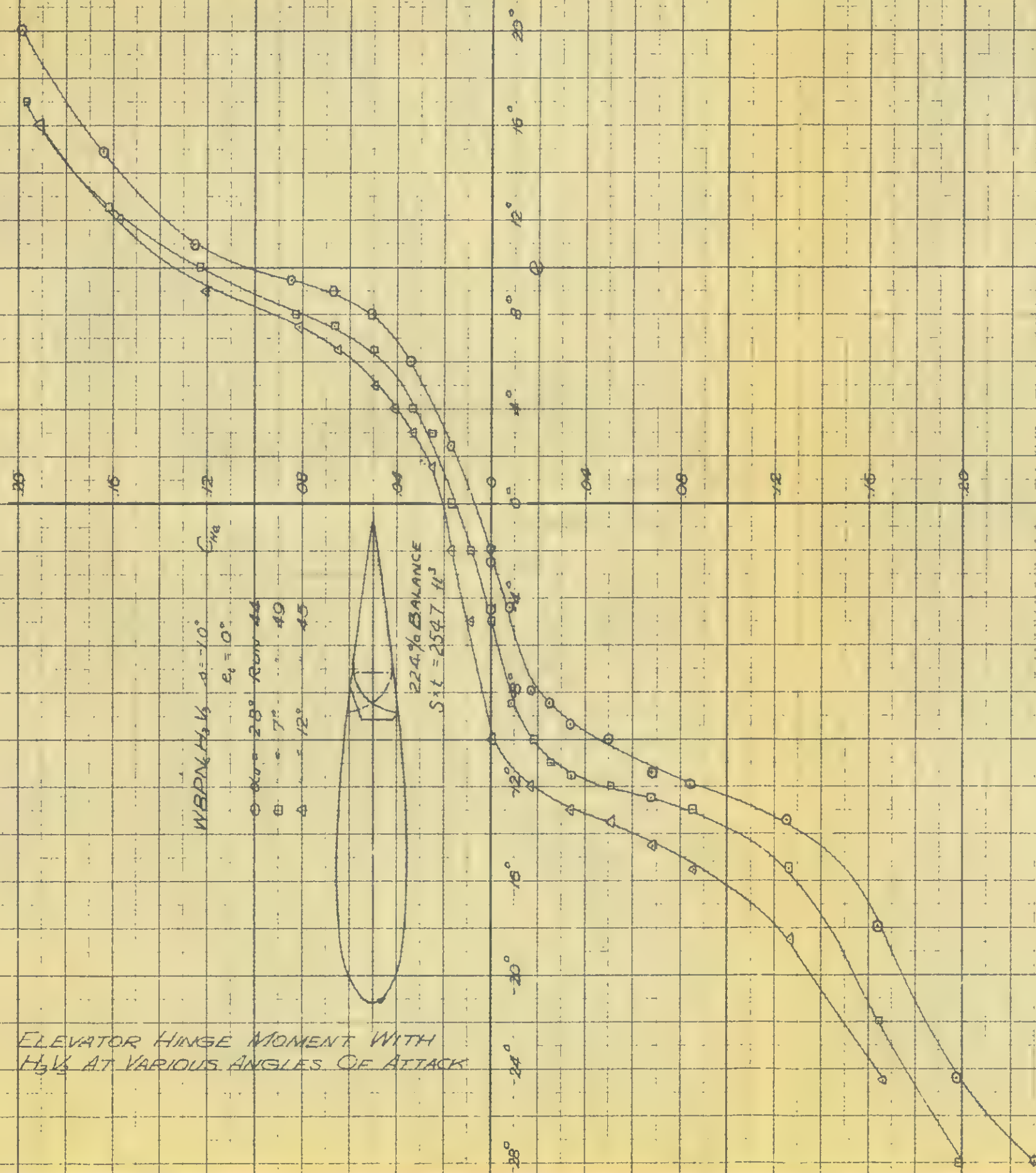
EFFECT OF ELEVATOR DEFLECTIONS WITH  $H_3 V_3$   
PARASITE DRAG



EFFECT OF ELEVATOR DEFLECTIONS WITH  $H_2P_2$  - FLAPS DOWN  
THREE COMPONENT DATA

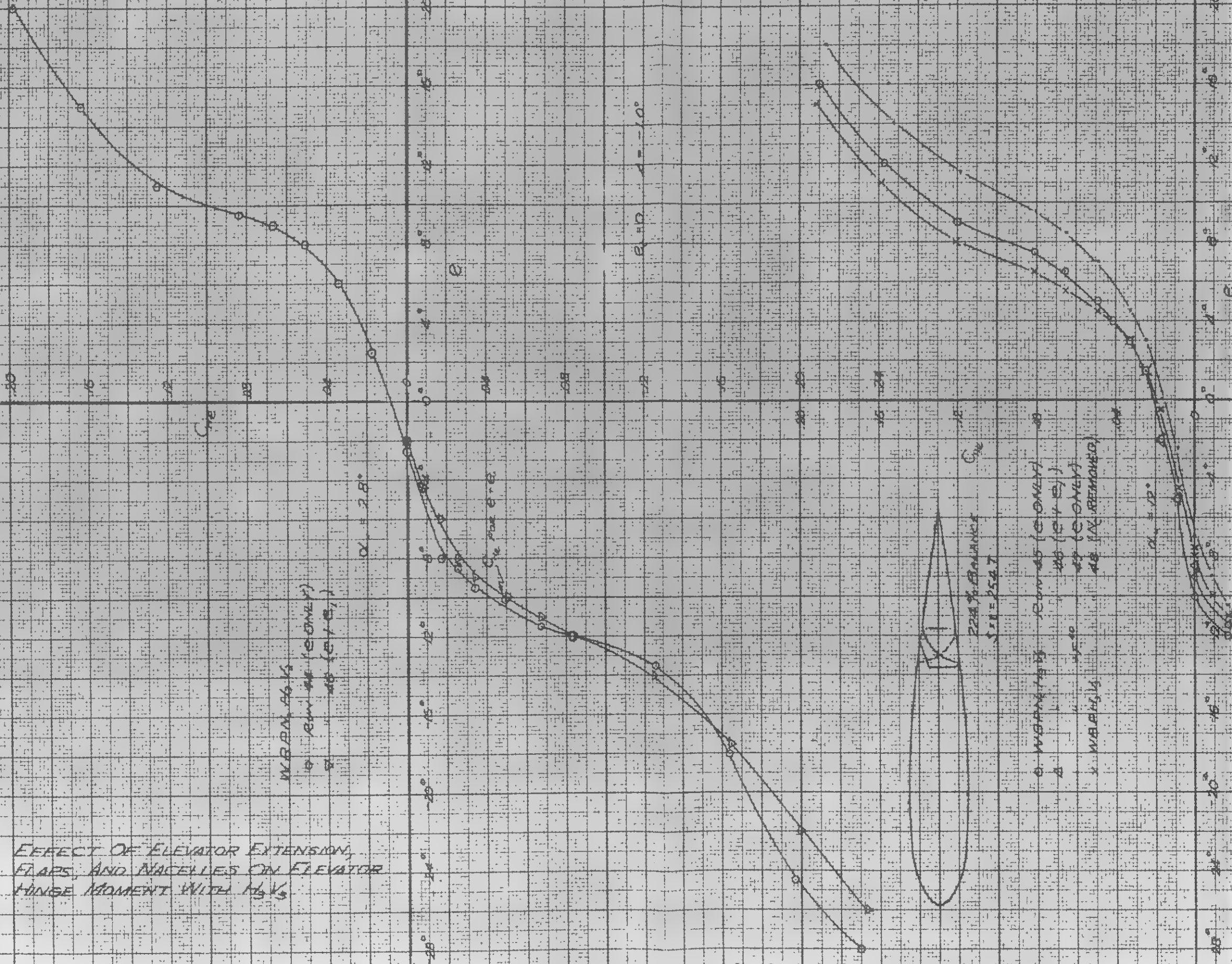




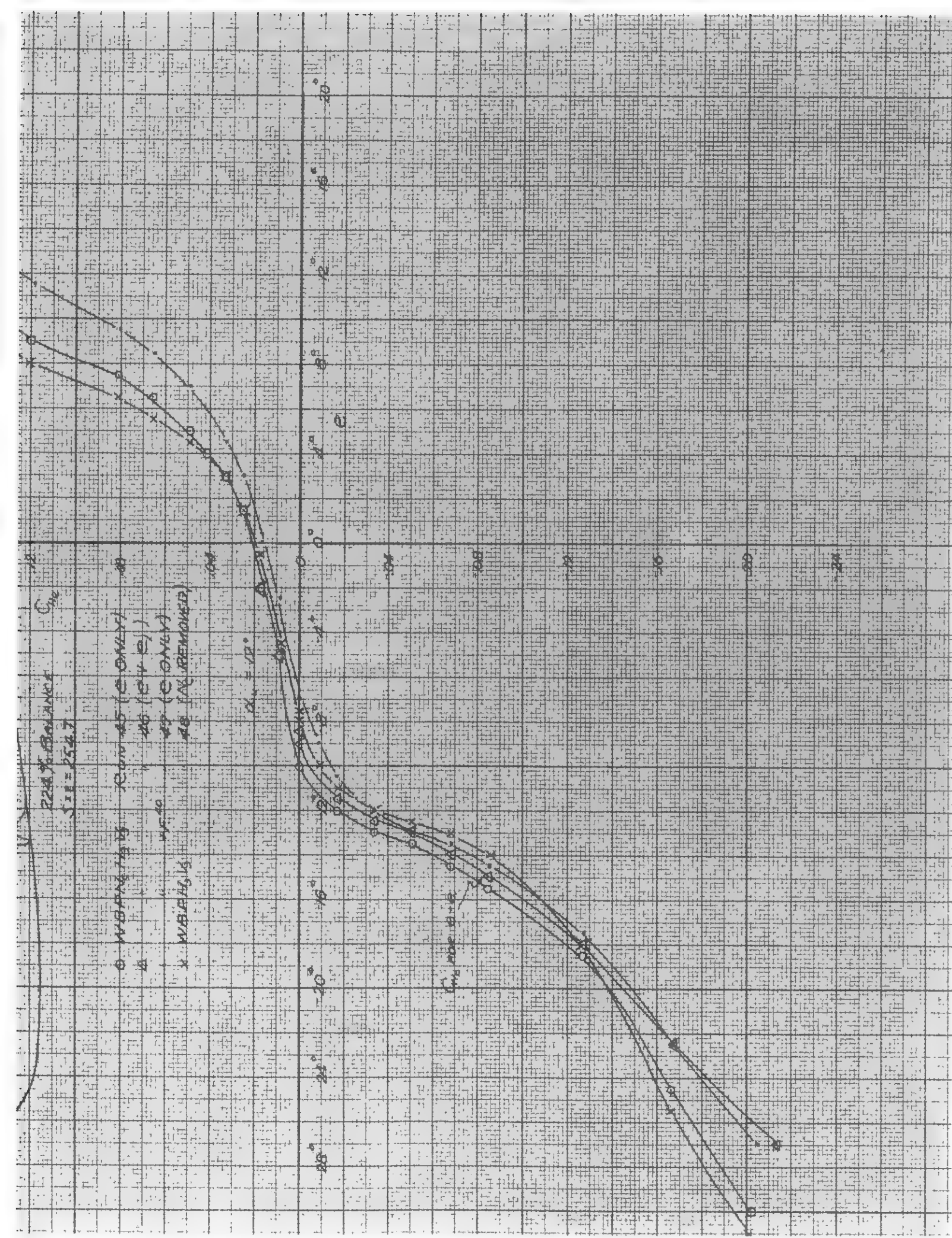


ELEVATOR HINGE MOMENT WITH  
 H<sub>3/4</sub> AT VARIOUS ANGLES OF ATTACK



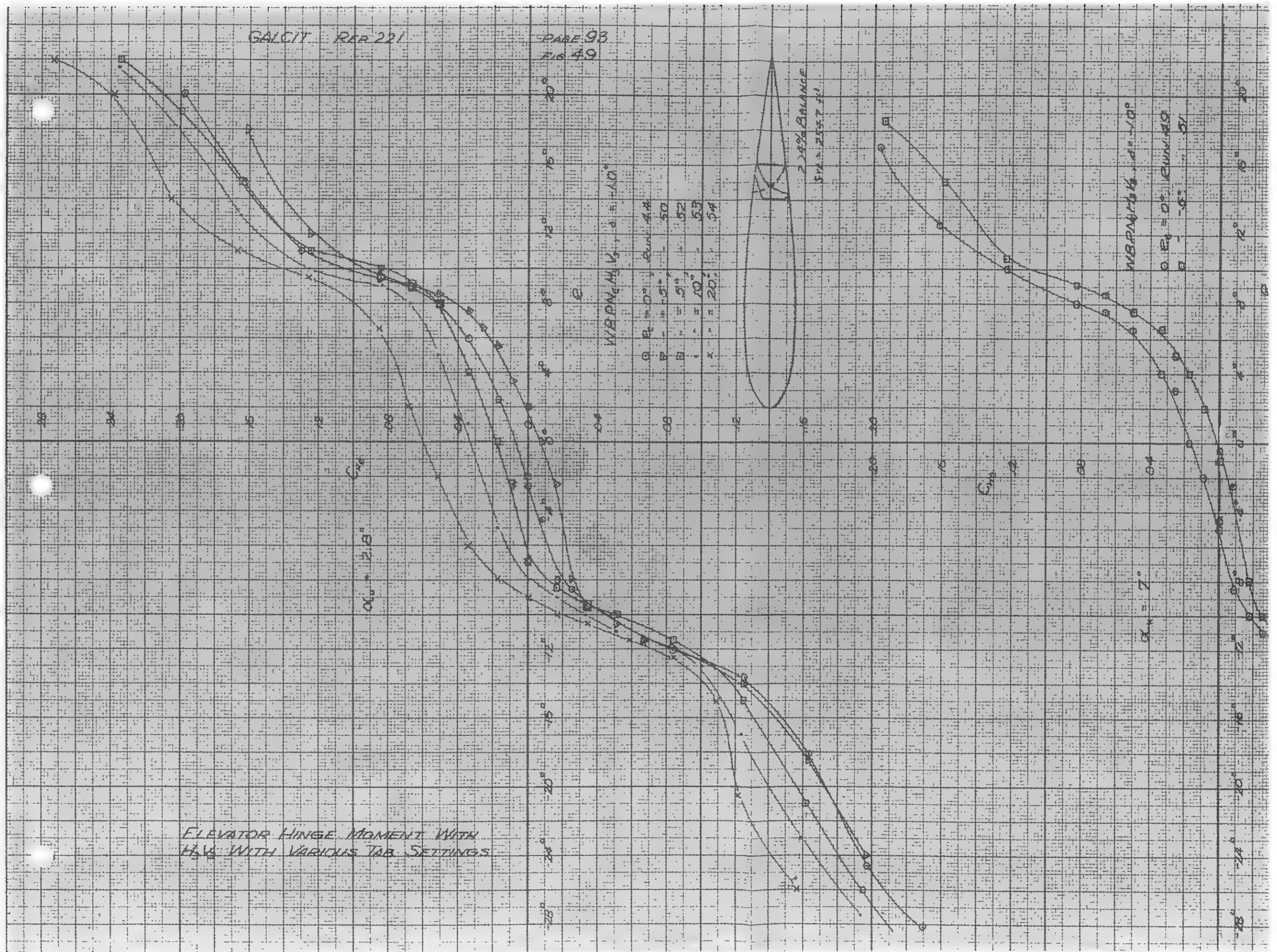


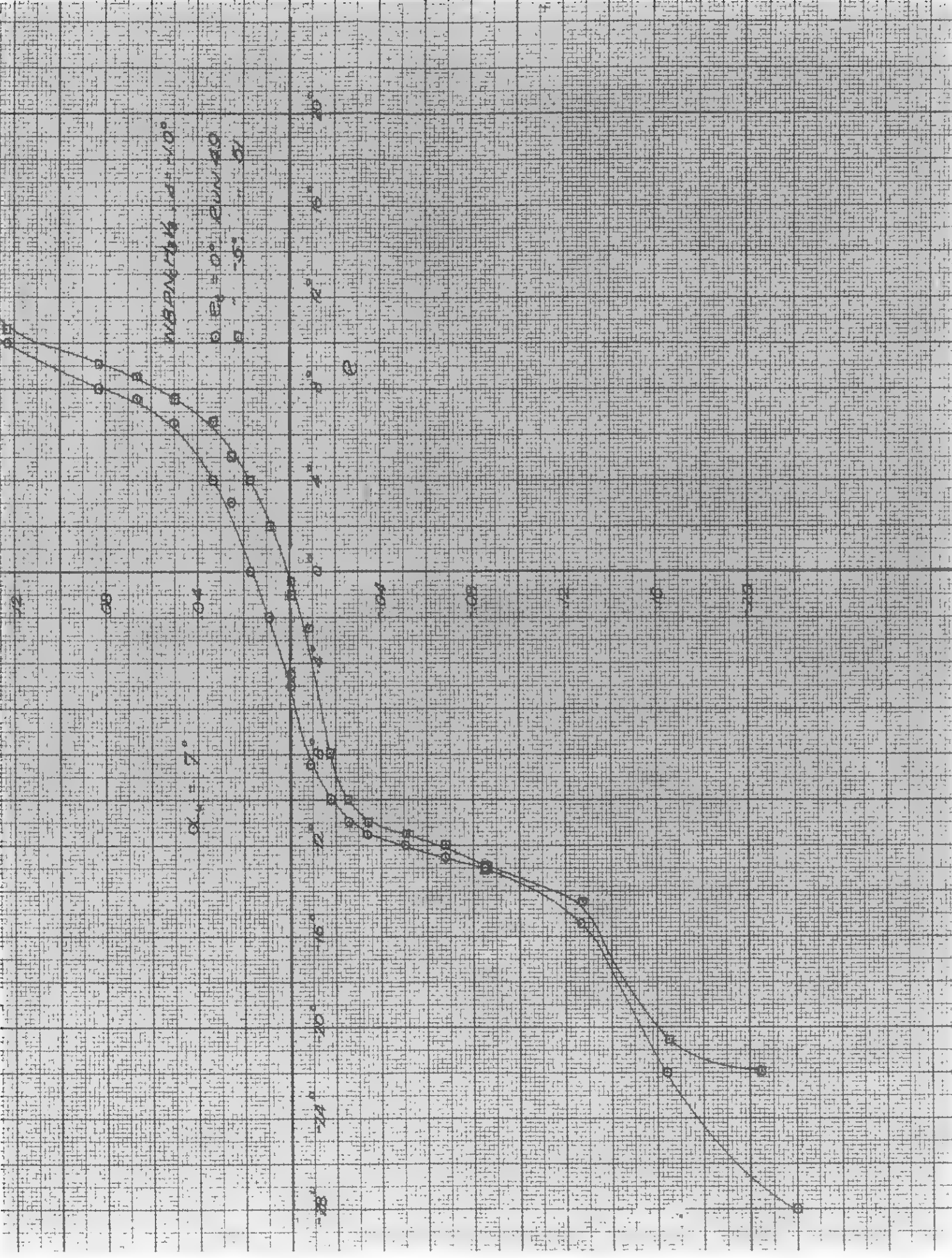
EFFECT OF ELEVATOR EXTENSION,  
FLAPS, AND NACELLES ON ELEVATOR  
HINGE MOMENT WITH  $H_0V_0$





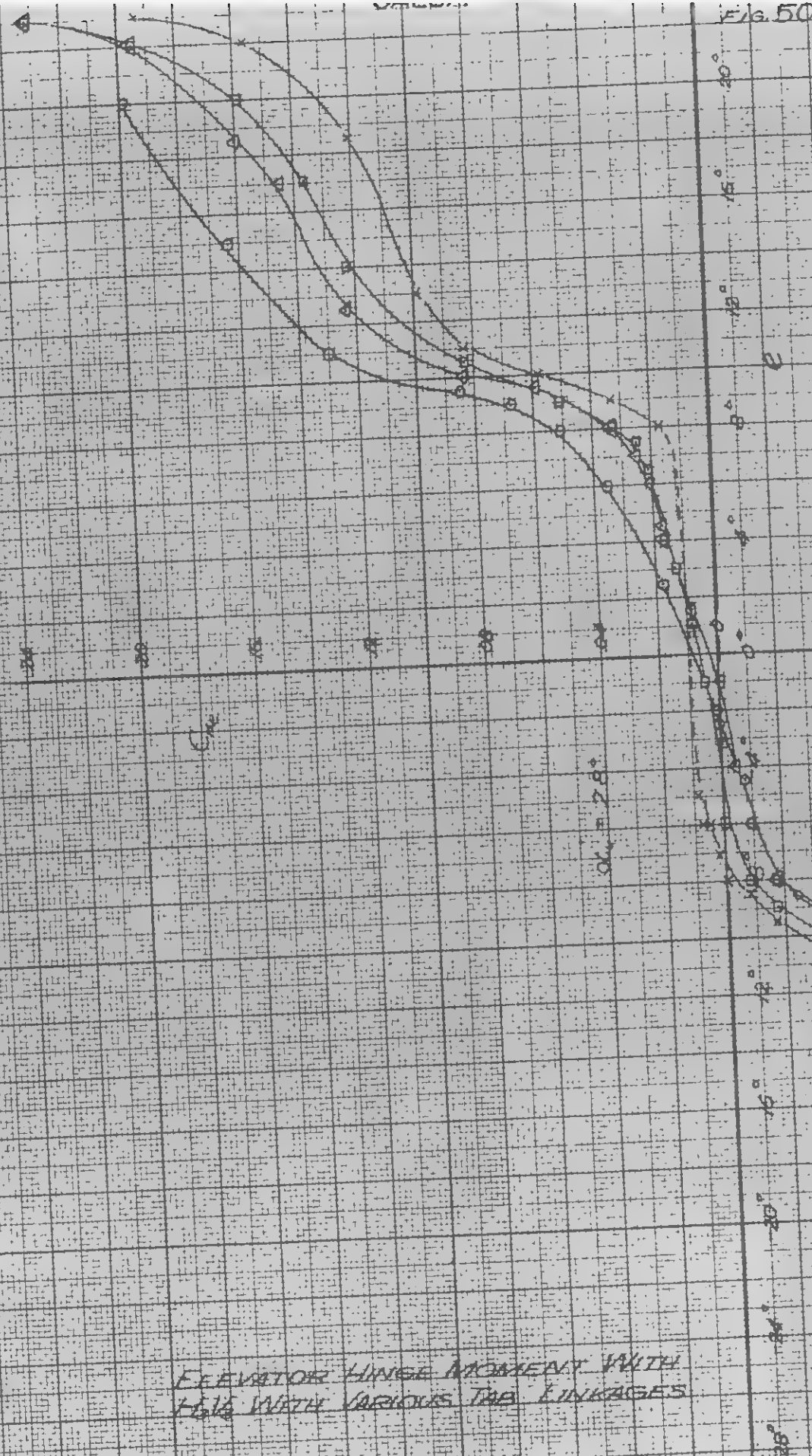
ELEVATOR HINGE MOMENT WITH  
 $H/V$  WITH VARIOUS TAB SETTINGS





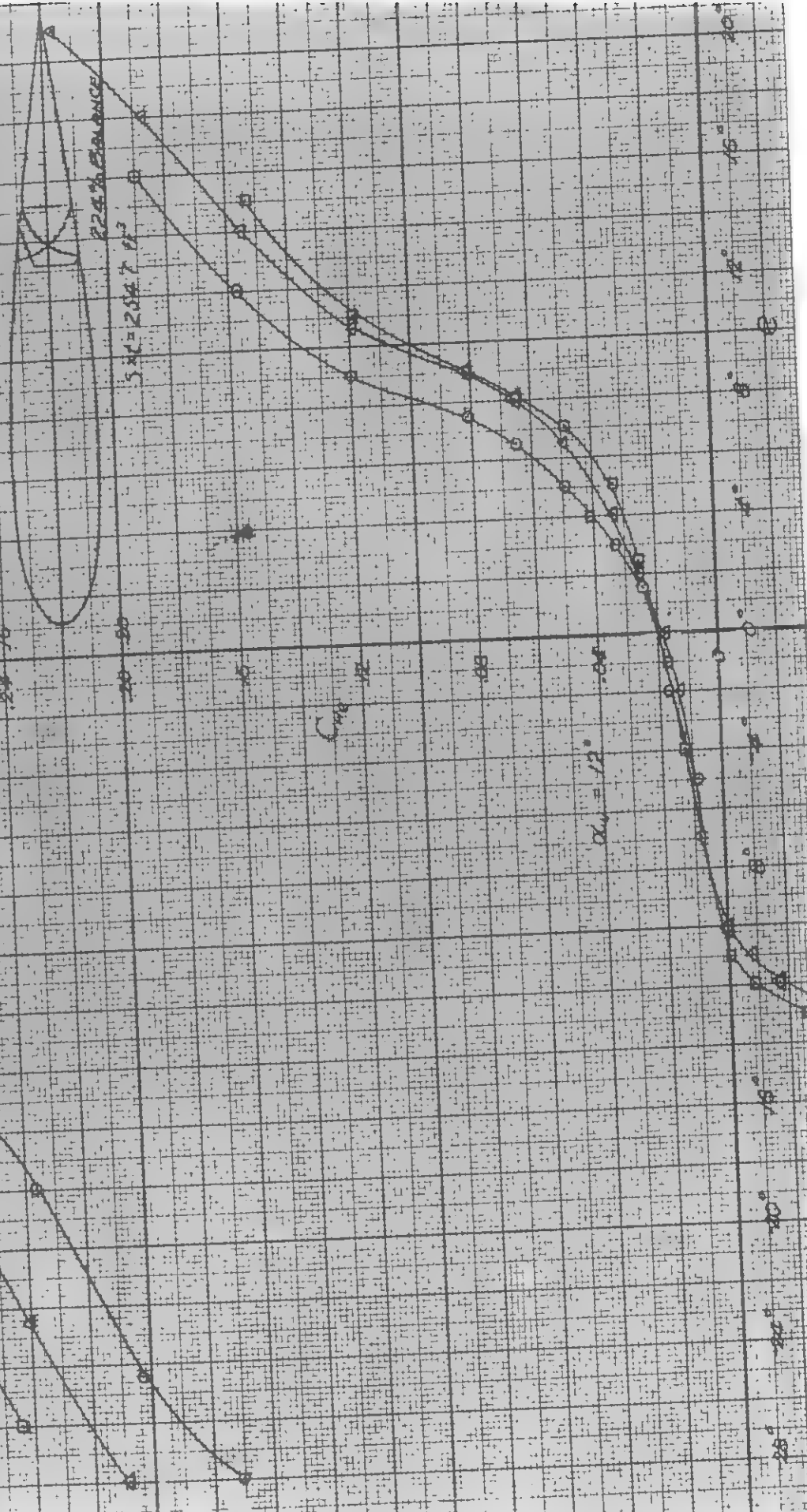


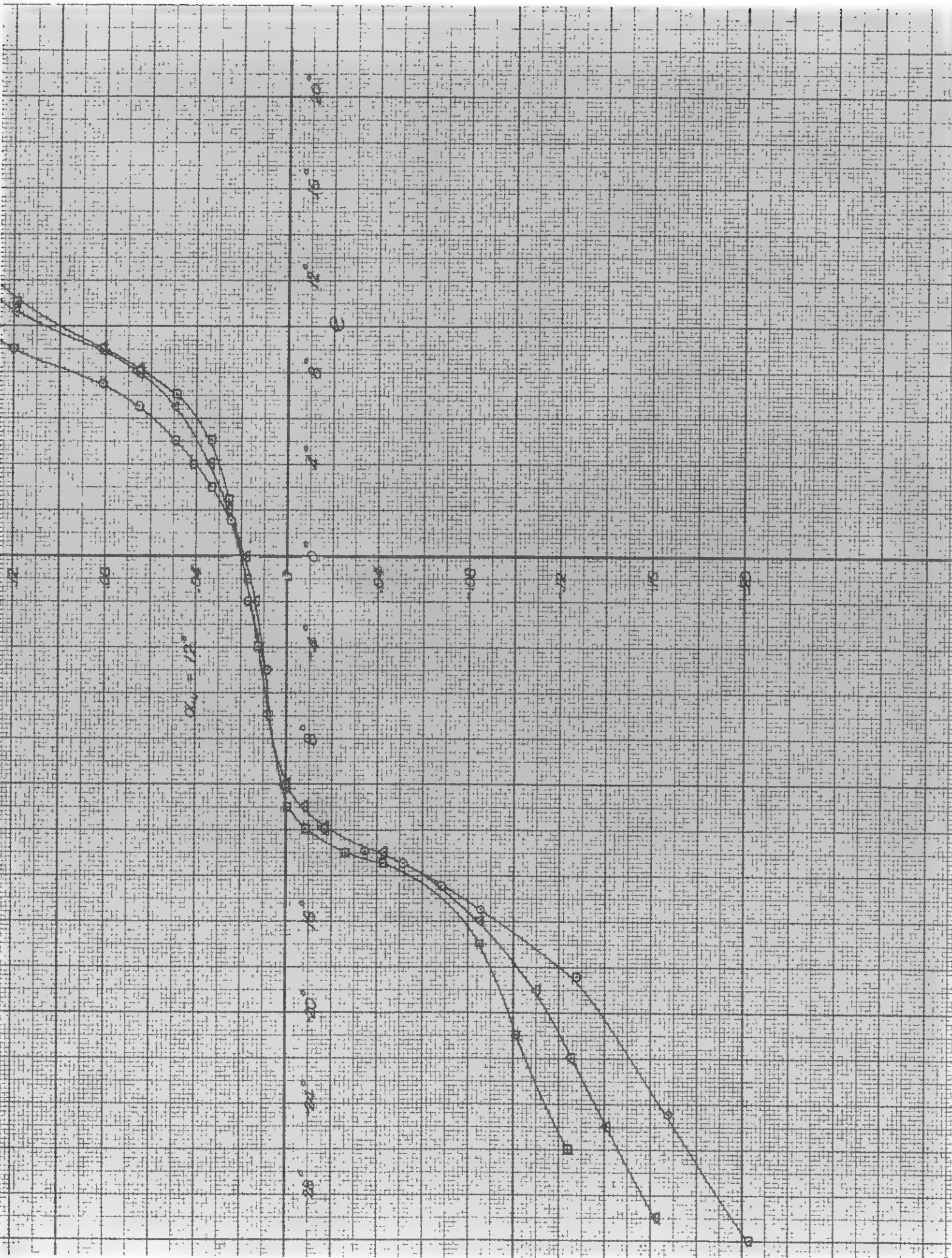
ELEVATOR HINGE MOMENT WITH  
FOUR WITH VARIOUS TAB LINKAGES



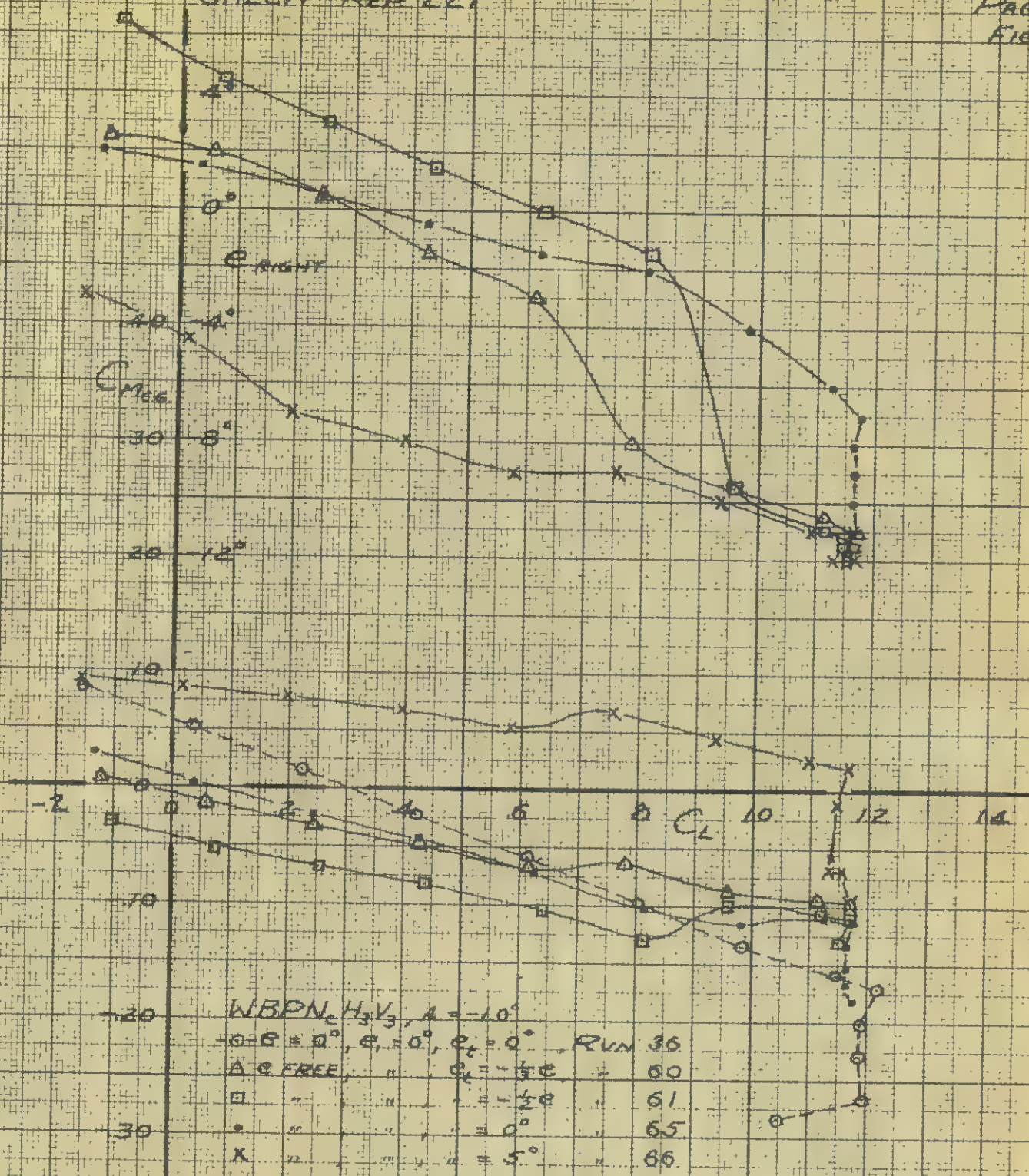
WARPEN, H. H.  $\alpha = -10^\circ$

|                           |            |
|---------------------------|------------|
| $\alpha_{LH} = 0^\circ$   | Rel. 14.45 |
| $\alpha_{LH} = 7.8^\circ$ | 55.85      |
| $\alpha_{LH} = 10^\circ$  | 57.58      |
| $\alpha_{LH} = 12^\circ$  | 59         |



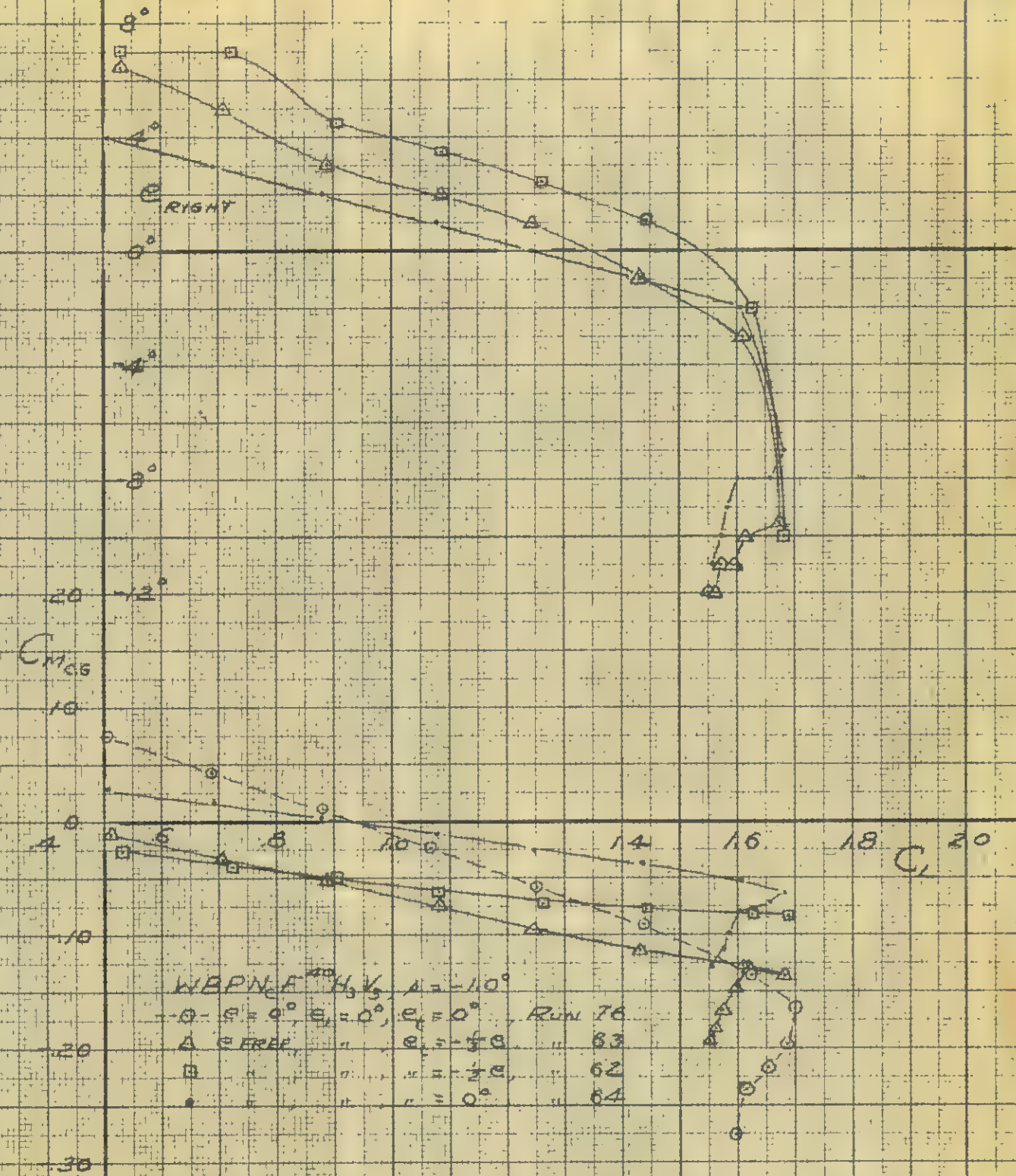






ELEVATOR-FREE STABILITY WITH  $H_3V_3$  WITH  
VARIOUS TAB SETTINGS AND LINKAGES





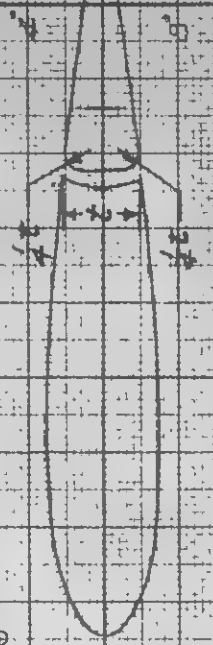
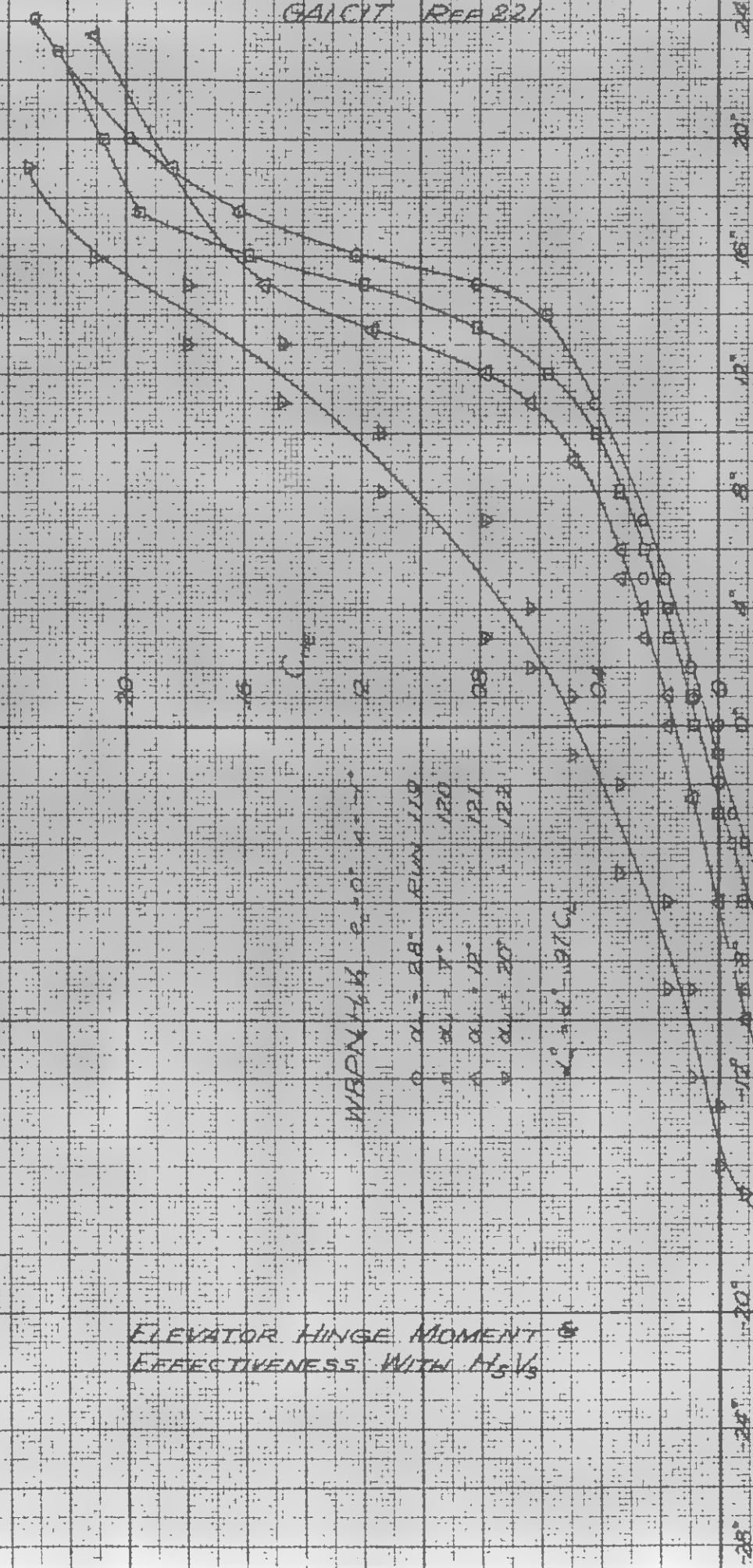
ELEVATOR-FREE STABILITY WITH  $H_3 V$  WITH  
VARIOUS TAB LINKAGES FLAPS DOWN



ELEVATOR HINGE MOMENT  
EFFECTIVENESS WITH  $M_5/V_3$

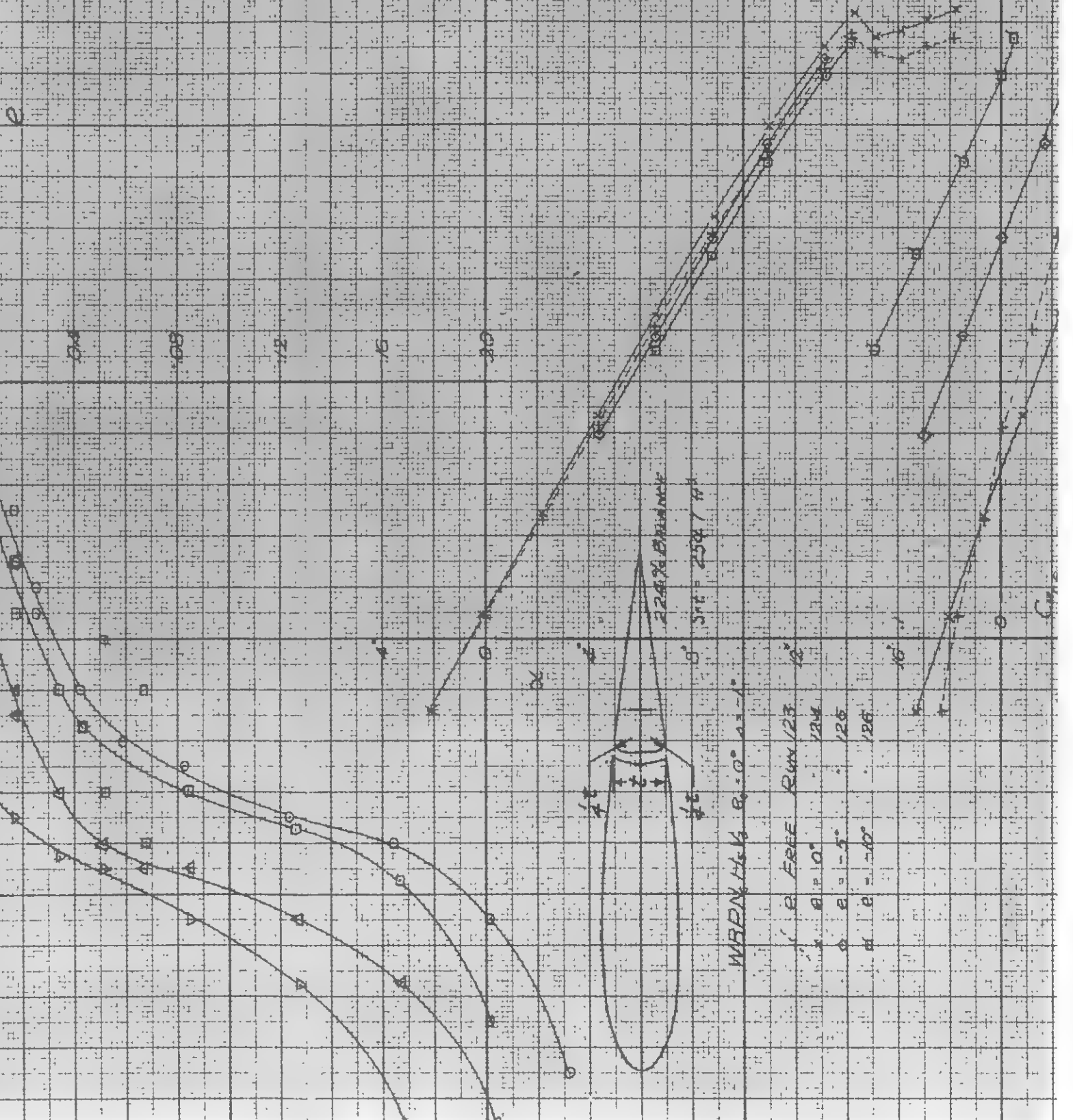
WBDN  $M_5/V_3$   $\alpha = 0^\circ$   $\alpha = 1^\circ$   
 $\alpha = 2.8^\circ$  RUN 119  
 $\alpha = 7^\circ$  RUN 120  
 $\alpha = 10^\circ$  RUN 121  
 $\alpha = 20^\circ$  RUN 122

$L_0 = 4.1$   $37 C_L$



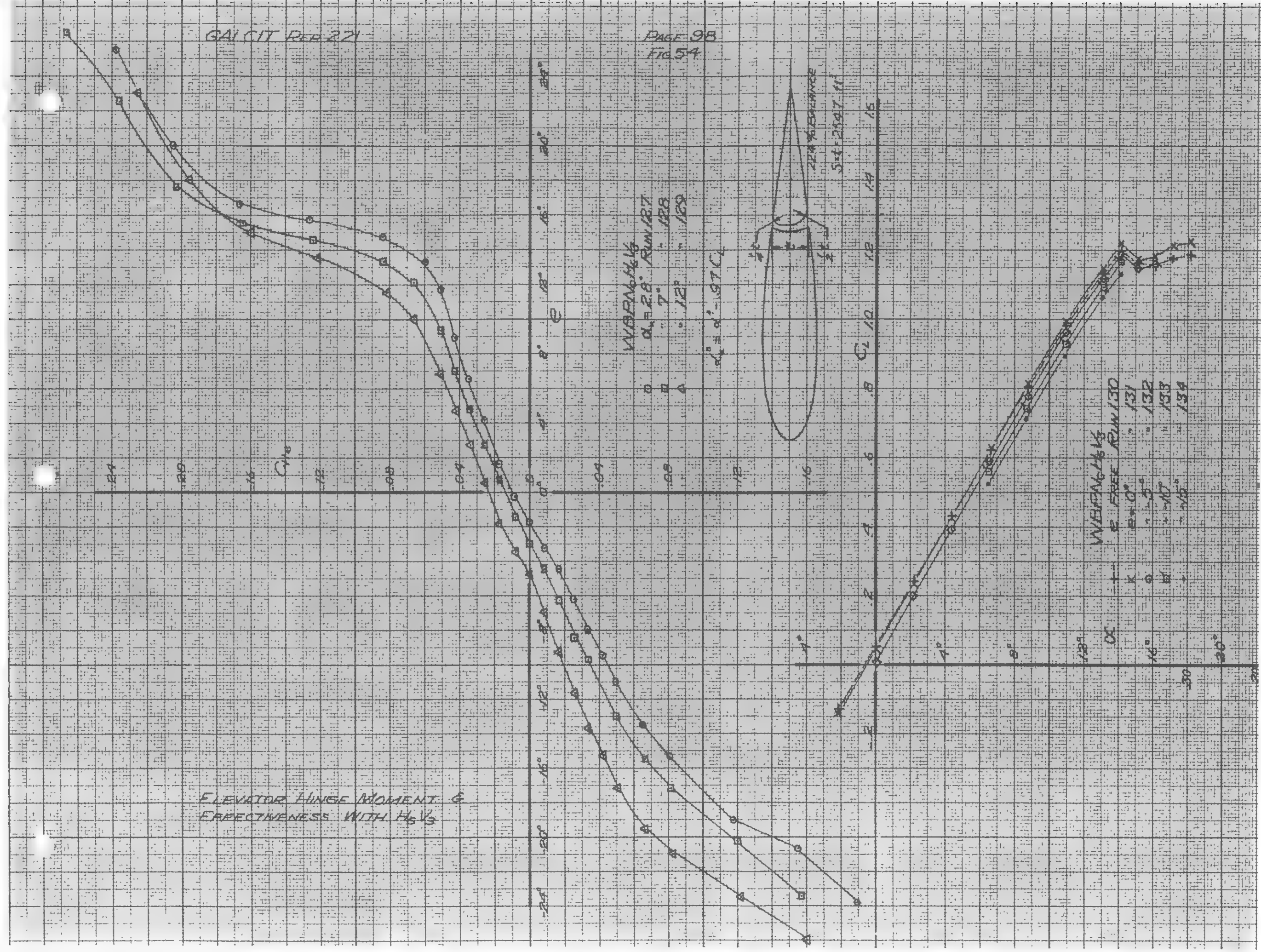
WBDN  $M_5/V_3$   $\alpha = 0^\circ$   $\alpha = 1^\circ$

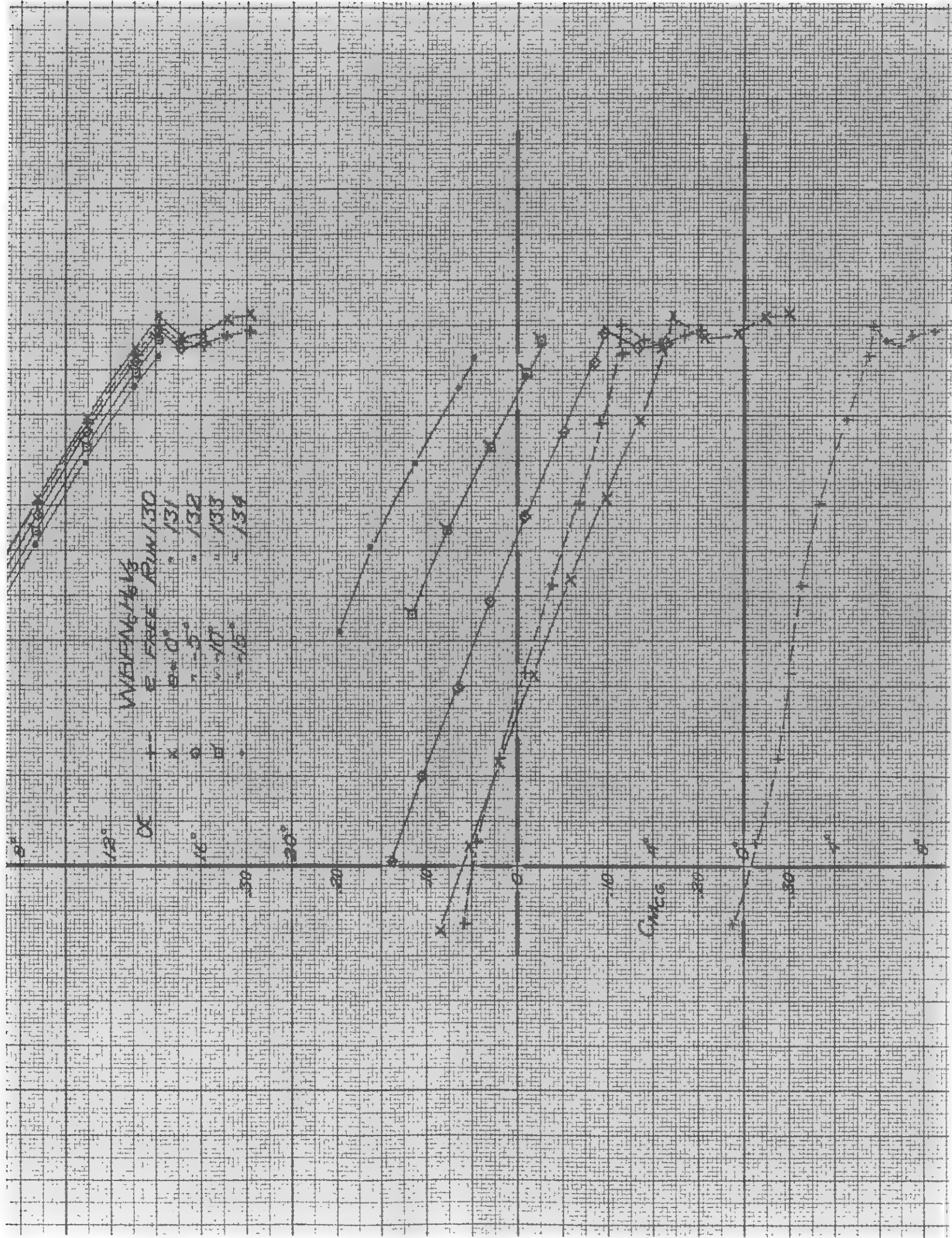
FREE RUN 123  
 $\alpha = 10^\circ$  RUN 124  
 $\alpha = 5^\circ$  RUN 125  
 $\alpha = 10^\circ$  RUN 126





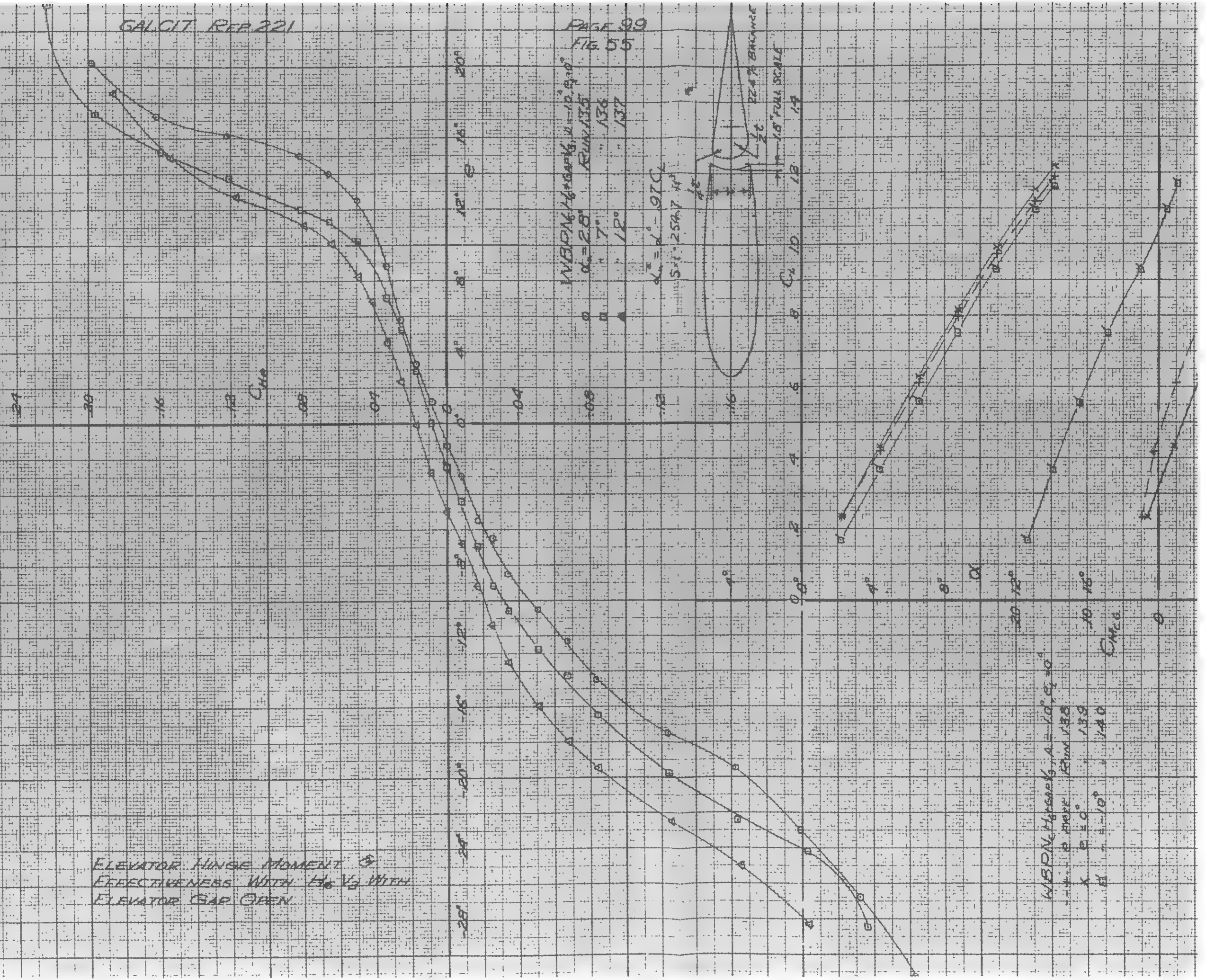






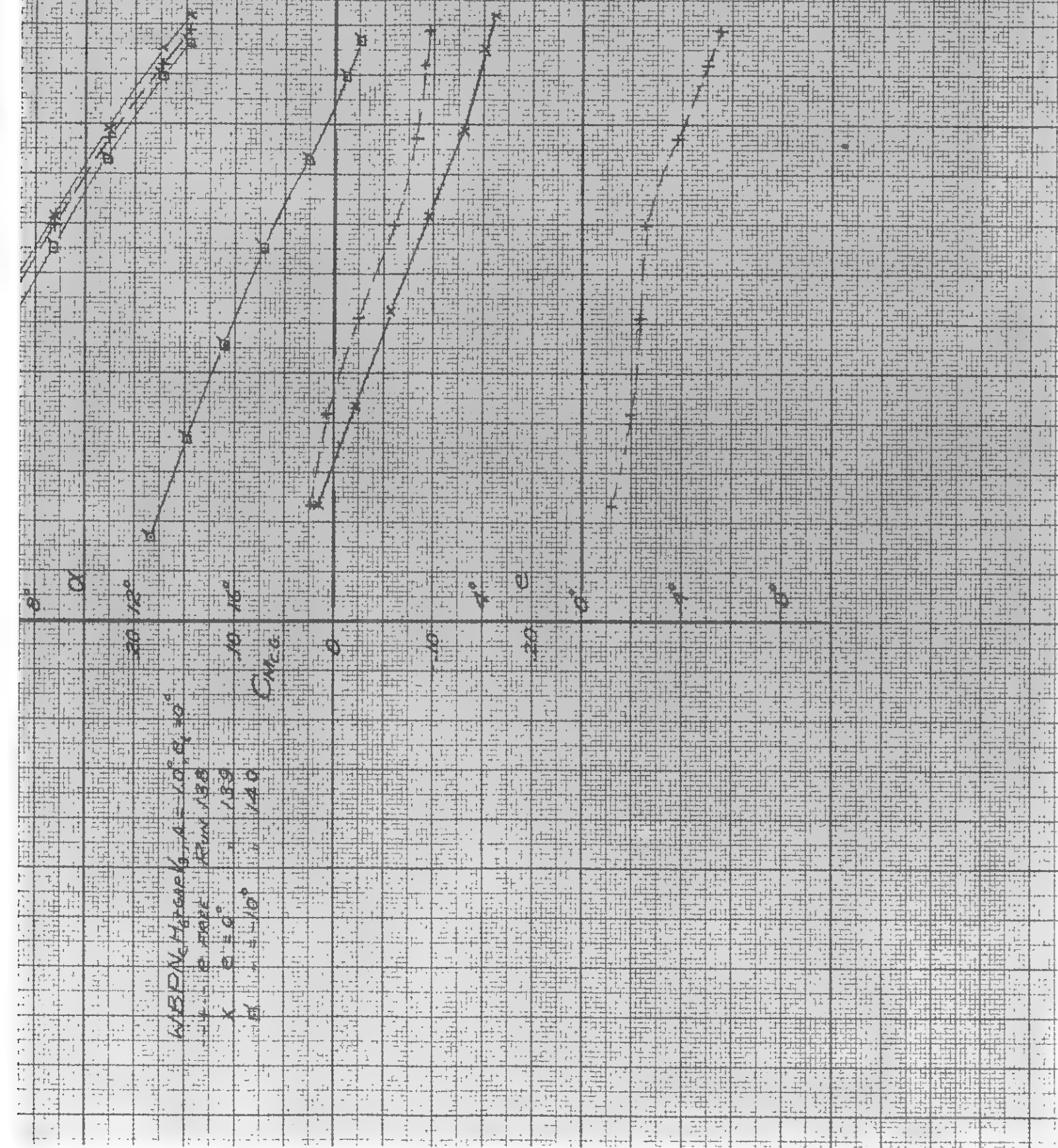


ELEVATOR HINGE MOMENT &  
EFFECTIVENESS WITH  $H_0 V_3$  WITH  
ELEVATOR GAP OPEN



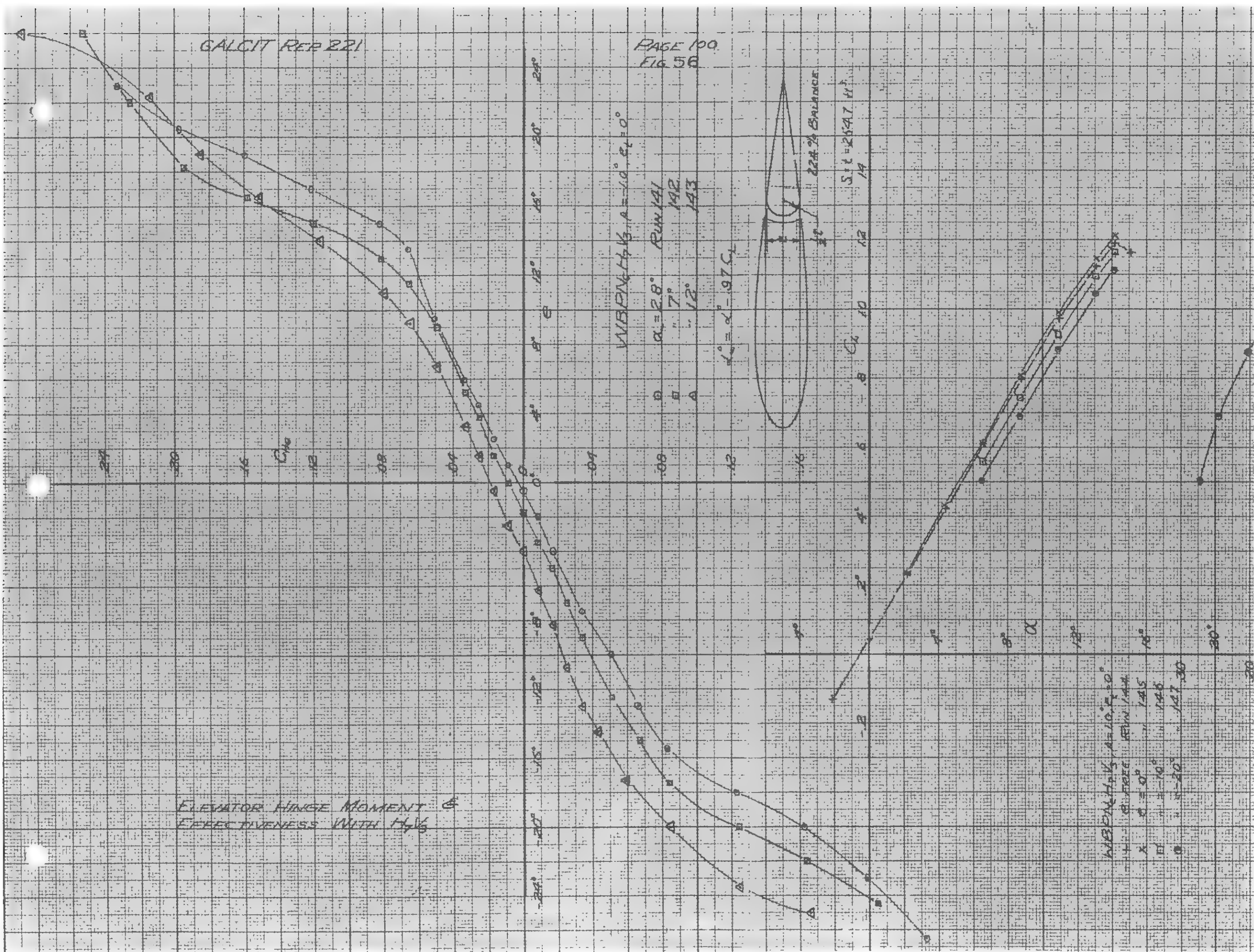
WEPN  $H_0 V_3$   $A = 10^\circ$   $C_L = 0.9$   
 $\alpha = 2.5^\circ$   $RUN 135$   
 $N = 7^\circ$   $136$   
 $137$   
 $\alpha = 2^\circ$   $97C_L$   
 $S = 1.2547 \times 10^3$

WEPN  $H_0 V_3$   $A = 10^\circ$   $C_L = 0.9$   
 $\alpha = 2.5^\circ$   $RUN 135$   
 $N = 7^\circ$   $139$   
 $140$

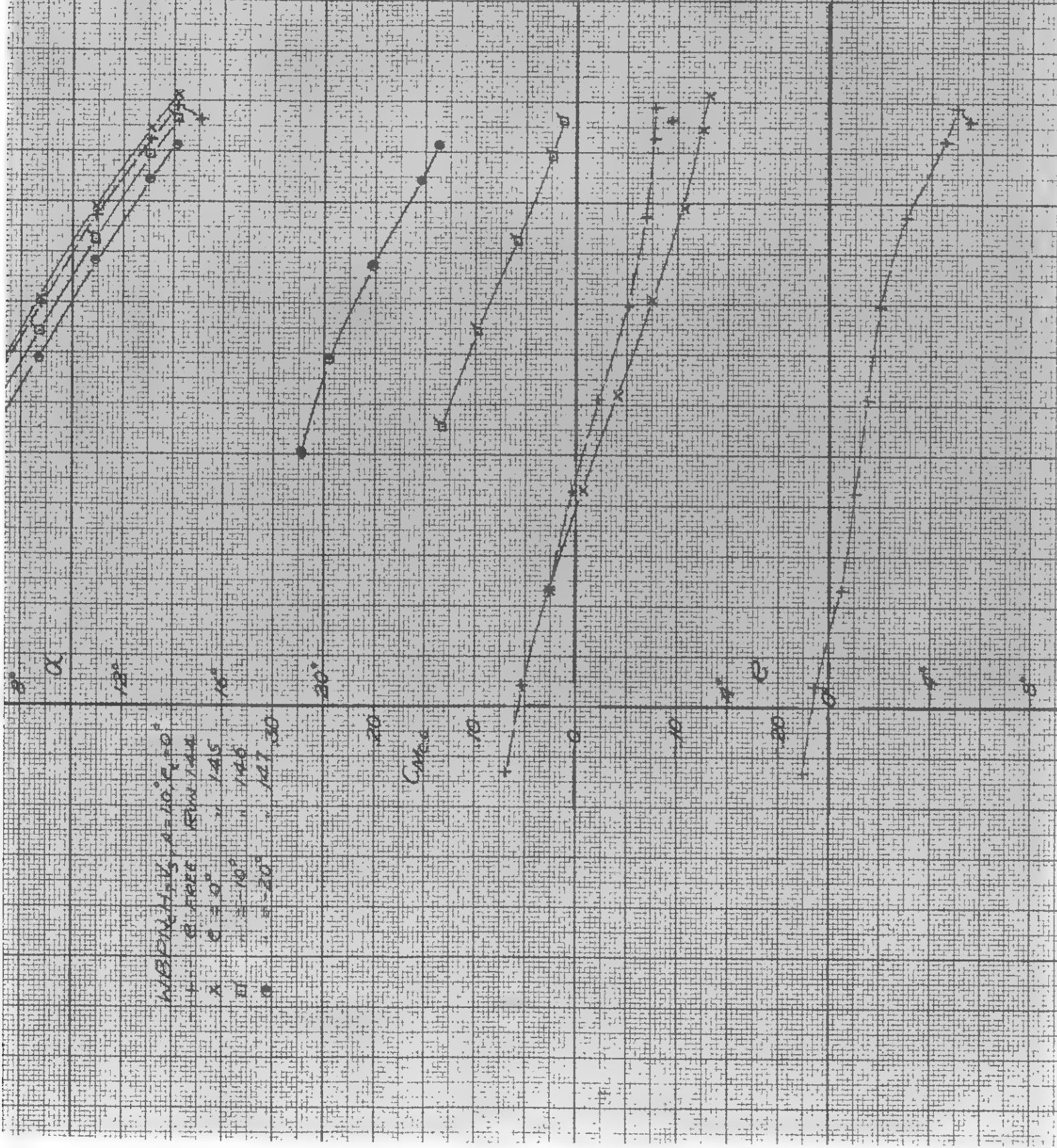




ELEVATOR HINGE MOMENT &  
EFFECTIVENESS WITH  $H_{1/6}$

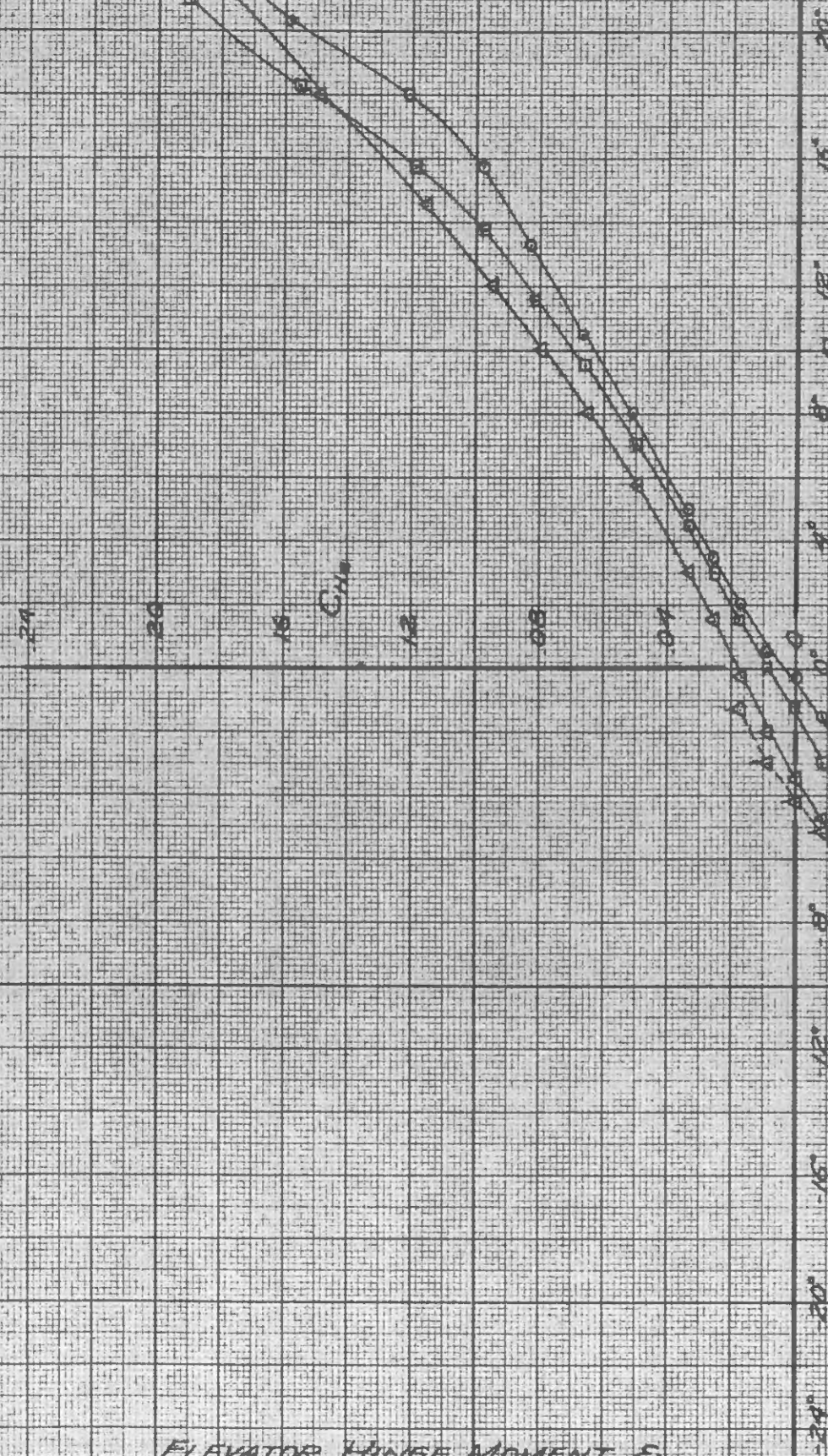


WBFN  $H_{1/6}$ ,  $A=10^\circ$ ,  $E_1=0^\circ$   
 Run 141  
 Run 142  
 Run 143  
 $C_{mq} = \alpha - 0.975$   
 $14$





ELEVATOR HINGE MOMENT &  
EFFECTIVENESS WITH  $H_0 V_0$



WBFWL H<sub>0</sub> V<sub>0</sub>

| $\alpha$ | $\alpha_w = 2.8^\circ$ | $\alpha = 0^\circ$ | Run |
|----------|------------------------|--------------------|-----|
| 0        | 0                      | 0                  | 148 |
| 1        | 0                      | 0                  | 149 |
| 2        | 0                      | 0                  | 150 |
| 3        | -0.1                   | -0.1               | 151 |

$\alpha_w = 2.8^\circ$   $\alpha = 0^\circ$   $C_L$   
5.47 = 2.847  $H_0$



22.4% THICKNESS

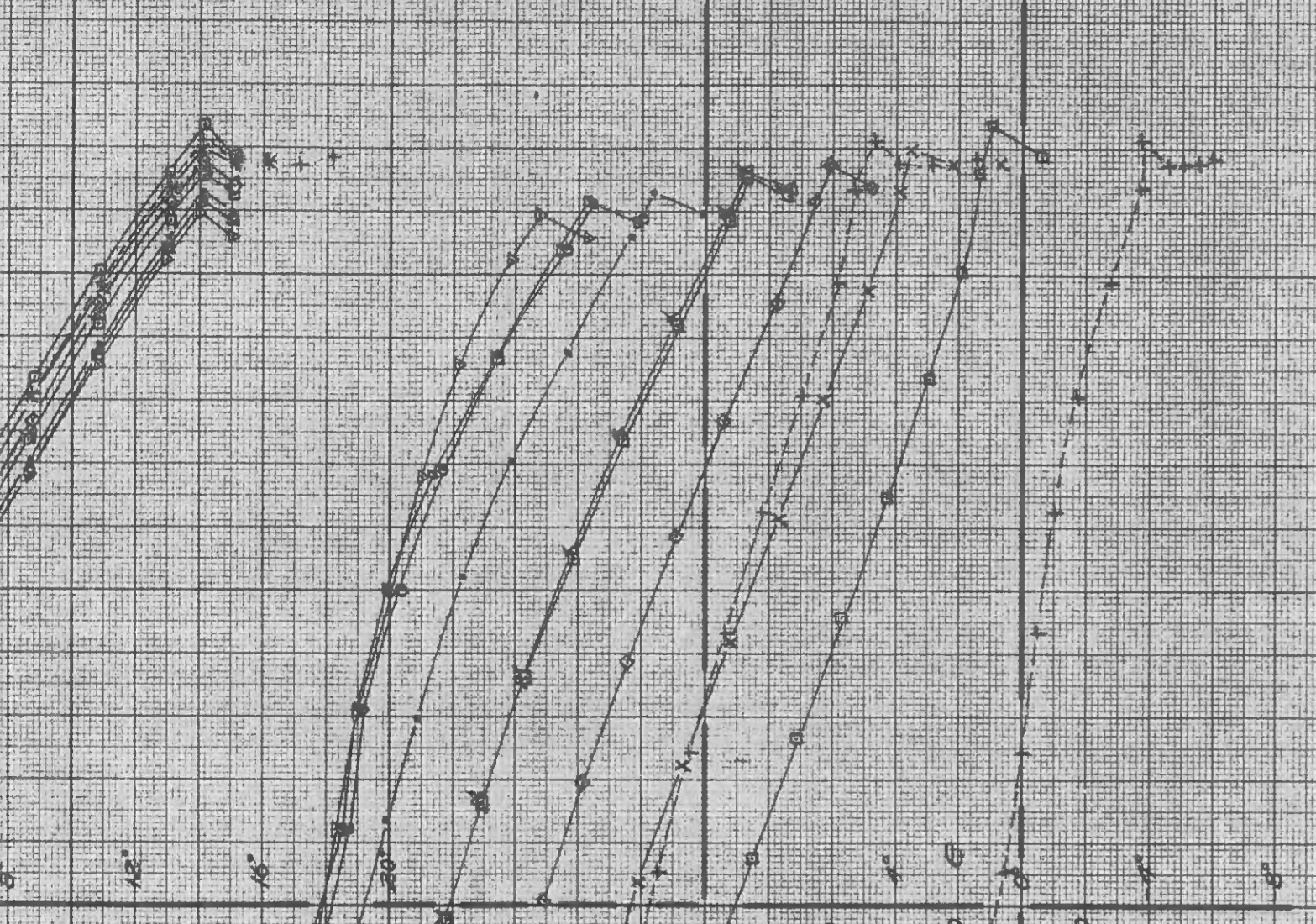
$C_L$  10 12 14





WSPN 166 1/2  
 0. FR 0. 0. 0. Run 151  
 0. 5. 0. 0. 16.9  
 0. 0. 0. 0. 16.7  
 0. 5. 0. 0. 17.0  
 0. 10. 0. 0. 17.1  
 0. 10. 0. 0. 17.4  
 0. 15. 0. 0. 17.6  
 0. 20. 0. 0. 17.8  
 0. 20. 0. 0. 17.9  
 0. 25. 0. 0. 18.2

Gmcc





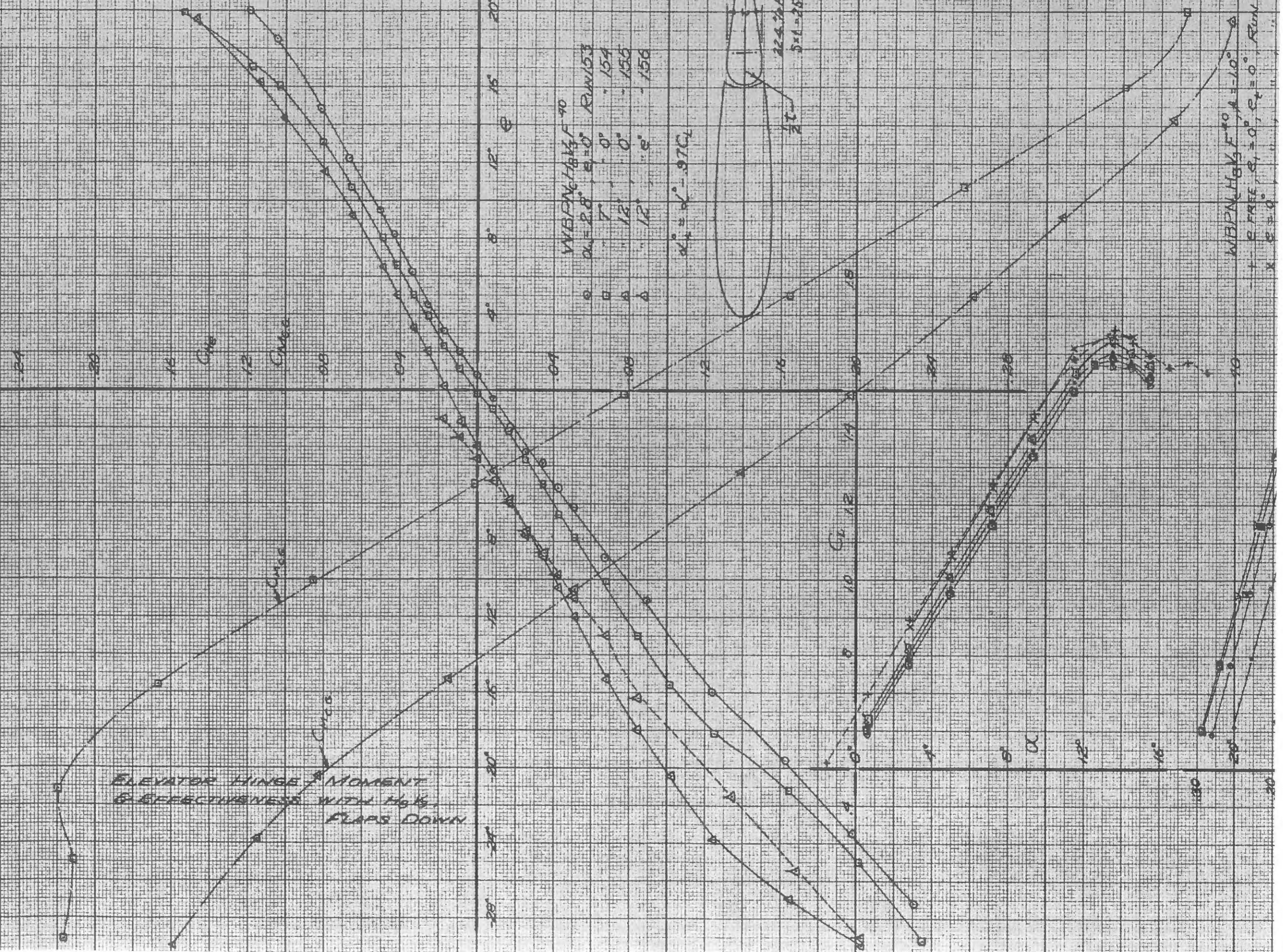
ELEVATOR HINGE MOMENT  
& EFFECTIVENESS WITH  $H_0 K_5$   
FLAPS DOWN

WEPN  $H_0 K_5 F^{10}$  RUN 153  
 $\alpha_1 = 2.8^\circ$   $\alpha_2 = 0^\circ$   $\alpha_3 = 0^\circ$   $\alpha_4 = 0^\circ$   
 $\alpha_5 = 7^\circ$   $\alpha_6 = 0^\circ$   $\alpha_7 = 0^\circ$   $\alpha_8 = 0^\circ$   
 $\alpha_9 = 12^\circ$   $\alpha_{10} = 0^\circ$   $\alpha_{11} = 0^\circ$   $\alpha_{12} = 0^\circ$   
 $\alpha_{13} = 12^\circ$   $\alpha_{14} = 0^\circ$   $\alpha_{15} = 0^\circ$   $\alpha_{16} = 0^\circ$

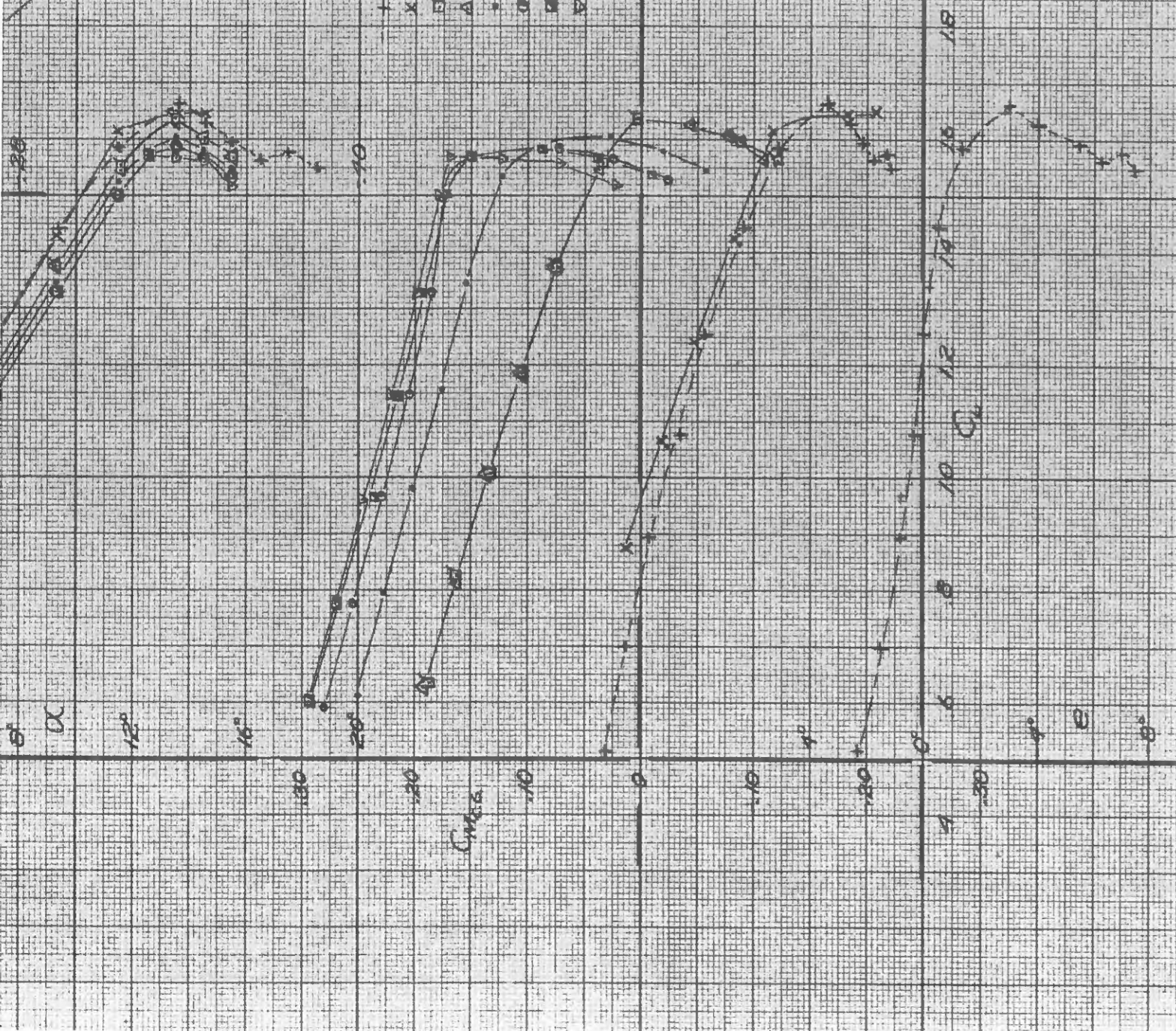
$\alpha_{17} = 12^\circ$   $\alpha_{18} = 0^\circ$   $\alpha_{19} = 0^\circ$   $\alpha_{20} = 0^\circ$

22.5% BALANCE  
 $\delta = 1.754741^\circ$

WEPN  $H_0 K_5 F^{10}$   $\alpha = 10^\circ$  RUN 152  
 $\alpha_1 = 0^\circ$   $\alpha_2 = 0^\circ$   $\alpha_3 = 0^\circ$   $\alpha_4 = 0^\circ$   
 $\alpha_5 = 0^\circ$   $\alpha_6 = 0^\circ$   $\alpha_7 = 0^\circ$   $\alpha_8 = 0^\circ$   
 $\alpha_9 = 0^\circ$   $\alpha_{10} = 0^\circ$   $\alpha_{11} = 0^\circ$   $\alpha_{12} = 0^\circ$   
 $\alpha_{13} = 0^\circ$   $\alpha_{14} = 0^\circ$   $\alpha_{15} = 0^\circ$   $\alpha_{16} = 0^\circ$   
 $\alpha_{17} = 0^\circ$   $\alpha_{18} = 0^\circ$   $\alpha_{19} = 0^\circ$   $\alpha_{20} = 0^\circ$







WBPN H<sub>2</sub>O<sub>2</sub> F<sup>10</sup>,  $\alpha = 10^\circ$  A  
 + C FREE,  $\alpha = 0^\circ$ ,  $C_t = 0$ , RUN 152  
 x  $C = 0$  " " " " " 168  
 □  $C = -10^\circ$  " " " " " 172  
 △  $C = -10^\circ$ ,  $C_t = -10^\circ$  " " " " 173  
 \*  $C = -15^\circ$ ,  $C_t = 0$  " " " " 176  
 ○  $C = -20^\circ$  " " " " 177  
 ▽  $C = -20^\circ$ ,  $C_t = -20^\circ$  " " " 180  
 ◊  $C = -25^\circ$ ,  $C_t = 0$  " " " 181